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Original Communications.

ARTICLE I.

THE MECHANICS OF THE OBSTETRICAL FORCEPS. A Thesis presented to the Chicago Gynæcological Society, by JOHN BARTLETT, M.D., January 16, 1880.

MR. PRESIDENT: I have announced for my subject this evening The Mechanics of the Obstetrical Forceps. While it is not my intention to go elaborately into the subject, I shall offer some remarks on the several portions of the instrument.

THE HANDLES.

The first forceps of which we have a reliable report, made by Chamberlen, had a handle like those of scissors, and the first instrument described and figured in obstetrical literature, that of Giffard, noticed by Chapman in 1739, had one of iron forming a hook, the point of which was turned toward its fellow. A few years later Smellie adopted the handle of iron and wood, which has served as a model to the present day.

The thin iron handles of Giffard are also now in use in a

modified form, as may be seen in the standard instruments of Hodge, Wallace and others. And this, notwithstanding that a worse form for a handle can hardly be conceived: in no department of mechanics or art, probably, can there be found a tool intended for the powerful grasp and traction of the hand, made of small, polished, springing rods of steel terminating, as a provision against slipping, in yet smaller rods, set at an angle to the others. In practice they fail to furnish a good hold for the hand in adjusting the instrument, and as a means of traction they are even more faulty. I can conceive of nothing but imitation which has kept such models so long in existence.

THE SHANKS.

The relation of the handle to the shank in the majority of instruments is that of a continuous, or nearly continuous line. The handles of Hodge's forceps are depressed slightly below the shanks in order to "preserve the line of traction of the blades." The handles of the forceps of Bedford, Aveling and Fitch are curved more or less downward, the latter two furnishing an admirable pistol-handle grip.

The shanks of the earlier forceps formed part of the cephalic curve in diverging from one another near the lock; later, as in Hodge's forceps, the head curve was formed almost entirely by the blades, the shanks being more or less parallel to one another. The object of this change was to secure a more easy application of the clams to the head, seeing that the mother's tissues permitted of a freer movement of instruments so formed and tended less by pressing forward the shanks to push or tilt the blade out of position. The new shape also was intended to render less decided that unnatural form of stretching of the perineum observed when it is compelled to span over the wide space between the shanks of forceps of the older style, as the head nears the vaginal outlet.

THE BLADES.

The blades of the forceps first made by Chamberlen have served as a model for all others. Various minor changes in the cephalic curve have been made. This curve, I believe, in almost all forceps, has been adapted for that position on the head which

it most generally assumes in low deliveries. The more recent instruments, however, as that of Wallace, are apparently constructed, as they should be, not only with reference to fitting the head as presenting low in the pelvis, but also with regard to seizing and holding it when at or above the superior strait. The internal lateral curve of some forceps, by which I mean the curve from side to side on the inner face, as in that of Dr. Davis', imitated in the genuine Hodge's instrument, is so marked that we may assume that the originator counted largely upon it, as a species of counter-sinking, for making firm the grasp of the head. It would be desirable to form this face of the blade to correspond as nearly as possible with that portion of head and face to which it is more generally applied. From measurements made by myself, it would appear that this internal lateral curve near the heel of the blade should correspond to a segment of a circle having a radius of $2\frac{1}{2}$ inches. While near the point, the curve should be one of $4\frac{1}{2}$, and about the middle of the clam 3 inches radius. The external lateral curves embraced by the walls of the parturient canal, should correspond to those of the internal curve, the thickness of the clams at the several points of measurement being, of course, added to the several radii above given.

The pelvic curve, invented, as is generally supposed, by Levret and Smellie, in 1747–1851, is the most important of the changes made in the instrument since its origination by the Chamberlens. It has been variously modified so that while some recently devised forceps have a curve as high as $4\frac{1}{2}$ inches, the majority of practitioners seem, in their selection of instruments, to indorse the statement of Barnes, that the curve should be moderate. The fact is, as will appear further on, that while a high curve seems desirable, as ordinarily used, forceps so constructed have not a good hold, or they have an inconveniently wide blade, and all of them tend to slip off in the direction of a line joining the resistance and the power.

THE MANNER AND CAUSE OF SLIPPING OF THE BLADES.

The forceps may slip off in the direction of the cephalic curve, by the opening or springing of the points of the blades; or the blades may be drawn off the head while yet in a fair position to

hold, in a line more or less departing from their long axis. In the one case the head may be represented as slipping through the yielding ends of the blades; in the other as slipping between their edges. The cause of the one of these modes of slipping may be too slight a cephalic curve, or too weak a blade. The cause of slipping through the blades' edges is traction in a line out of their longitudinal axes—usually the result of drawing upon curved forceps in a line parallel to their shanks, deviating more or less from the axes of the blades, according as the pelvic curve may be higher or lower.

The blades of Smellie's forceps had a moderate width. When the second curve was added, the direction of traction falling at more or less of an angle with the blades, developed a tendency to slip off the head sidewise, as explained by Chapman in his (the first) description of the forceps. Doubtless the new pelvic curve was one of the causes of the insecure hold of Giffard's forceps, which forced Chapman, as he says, to lay the instrument aside, and resort to turning and the fillet for ten years.

In this connection I may cite the statement of an older writer, to the effect that Levret's curve, as first devised, was more considerable than that of his latest instruments. We may safely presume that once the conception of conforming the forceps to the curve of the pelvis having entered the mind of Levret, he proceeded to take the pelvic curve as a guide. Then we can as easily imagine that when he came to use the instrument, he quickly discovered that a pronounced curve had the fatal disadvantage of allowing of lateral slipping, and that finally he compromised between the necessity for a curve and the inconveniences of a considerable one, by adopting that one which has retained its place for more than a hundred years.

To counteract the tendency to slipping off sideways, we may suppose that Dr. Robert Wallace Johnson, who wrote in 1768, devised his peculiar forceps, the lower rim of the blade of which projected awkwardly backward, forming the so-called perineal curve, so that one rim of the instrument might rest in front of the parietal protuberance, while the other took strong hold behind it. This instrument was followed by the Davis forceps, constructed with like intention, and this latter blade, variously modi-

fied, has come down to the present generation in the standard instruments of Hodge, Wallace, Smith and others.

THE LOCK.

The lock of the forceps has frequently been changed since the time of Chamberlen, and not always for the better. He tied his blades together with a thong, passing through holes suitably located. Giffard, or some one before him, thought to improve upon this by substituting a screw. This was discarded by Chapman; and as I regard the setting aside of this mode of connecting the branches, and the final substitution of a different method, as of particular interest, I beg leave to introduce some extracts from the Midwifery of Dr. Chapman, published in 1739.

Please to observe with what emphasis he declares that his instrument held very much better, and was applied with greater ease to the patient and himself, when the blades were loosely interlocked and held together with the hand, than when stiffly joined by the screw.

"When the blades are passed they are then to be brought together, and, if you please, the screw may be put through and fastened with the button, though there is no occasion for the loss of so much time, for without doing this the hand will prove sufficient to keep them together." (It is necessary here to explain that in Giffard's forceps, which Chapman used, there was a recess in one blade at the lock into which the other rested as we see in some pincers used by artizans.)

"It is much better" continues Chapman, "that the forceps should not be joined or fixed by a screw, because when they are not screwed together, though they should not happen to be exactly opposite to each other, yet they will turn so as to take fast hold of the head and readily extract it."

"I have always found the instrument far less apt to slip since I omitted fastening (screwing) the parts together; and with more ease to the patient as well as myself, and in much less time than before, have found the head of the child fairly fixed in the instrument."

"Mr. Giffard frequently complains that his extractor (forceps)

slipped, which I am fully persuaded it would not have done if the parts had been left unjoined (unscrewed) as I now use them."

Subsequently to this writing Dr. Chapman (according to Rigby) invented that method of uniting the parts of forceps which has come down to us as the English lock, though it is to be regretted that the efficiency which its originator strove to give it has been and is now too often marred by changing it from a loose to a tight lock. The lock of Siebold known as the German, as well as the pivot lock, known as the French, and all the modifications of it which have fallen under my notice are greater or less improvements upon the Giffard lock.

I shall speak presently of the part which the lock plays in securing thorough opposition of the blades and a firm hold; and before reaching that subject I wish to call attention to a lock recommended by Dr. Bond in the *American Journal of Medical Sciences* for 1850, and described and figured in *Churchill's Midwifery*. The very stout and peculiarly shaped screw of this lock was designed by its inventor to allow the rocking of the blades from side to side about a line passing centrally from heel to point. This lock is perfectly adapted to such a purpose, and it would, without doubt, with some modification, admit of a see-saw motion of the blades on the lock as a pivot and in parallelism with the central plane of the instrument, and what, as will be seen, is of great importance, this lock would regulate both the rocking and the other motion, which I shall call racking, so that both movements may be limited within proper bounds.

Some writers express a preference for the English lock because it is simple and easy to lock and unlock. A few, as J. Y. Simpson, take note of the essential point, that it should be loose. It is not such a lock as this (showing forceps with a very close lock) that Chapman recommended, but such as this (showing a genuine Simpson's forceps).

Before following me into the study of the advantages of this lock, please note particularly its characteristics. Observe the ends of the handles while I rack them by one another, when closed. You see that they have a play so considerable that the upper surface of the right handle nearly corresponds to the lower surface of the left, and the reverse. Now observe the points of

the blades while the handles are racked as before and note how one plays by the other in the plane of the handles. Now remark the motion of a blade when a movement of rotation is imparted to its handle.

I desire to call your attention to the advantages of these movements and I will illustrate what I have to say on these forceps, known as the instrument of Dr. Zeigler or Dr. Barclay; for in them there is such an exaggeration of the movements to which I wish to call attention, that they cannot fail to be noted all over the room.

I will first state the advantages of the loose lock and then illustrate them with the instruments and model,

1. The loose-lock forceps are easier of application. 2. They are less apt to injure the head of the child. 3. They can be used with less pain to the patient. 4. They are less liable to injure the tissues of the mother. 5. A less amount of traction is necessary with them than with other varieties. 6. They hold the head seized in whatever diameter or direction, with a powerful grasp. 7. In the event of the necessity arising for turning the head in the pelvis, as in rotating the occiput forward, the loose-lock forceps renders the operation safer and easier.

Let us consider the advantages here claimed, seriatim.

(1.) They are easier of application: The greater facility of application has no reference to the introduction or near apposition of the blades, but to their *locking*. What is the obstacle to the locking of the forceps when the blades are very nearly but not quite in apposition? Let us see. Take this stiff-lock instrument, a modern Bedford, and apply it to this head, we will say in the left occipito-cotyloid position. Here rests the right blade, over the occiput and the left over the brow, but not over it exactly, for it rests on, and impinges against, the head by the posterior rim of the blade only. Note the position of the anterior rim, how it projects in front of the head; in this instance quite an inch. Now, we are ready to appreciate one of the causes of difficulty in locking. When not locked but in near apposition, this left blade would rest thus, upon the front and side of the forehead and bound down in that position by the vagina acting like this wide rubber band, which is drawn over the blades. Let

us now attempt to lock the forceps. You observe that it cannot be done without stretching the rubber band; that the rotation outward of the blade in an attempt to cause it to assume the required position of exact apposition to its fellow, is resisted by a force proportionate to the strength of this band, or, we may say, of the walls of the parturient canal. In practice, encountering such a resistance when the forceps are as here represented, what do we do? We are told by the experienced to press the handles far backward, and to push the blades upward; why? For this reason; by so doing, we cause the wide part of the blade to move off of, and above the point where the vagina clamped the clam into a wrong position, and in lieu of the widest surface, we substitute as the portion resting on the head, the narrowest part of the blade; then we make an effort at locking. The stretching of the vaginal wall, the degree of lifting of it from the head, necessary for the twisting into position of the blade, is much lessened, and the effort at locking is probably a success. Now, with the loose-lock forceps, *all this difficulty is avoided.* The blades, when introduced, assume exactly the position of those of the stiff-lock instrument just pointed out; but when we seek to lock them there is no difficulty; the loose-fitting lock allows the pronated blade to accommodate itself to the surface of the head, and locking is at once effected, without resistance from the vagina.

(2) It is much less apt to injure the child. Let me recur again to the position of this rigid-lock instrument on the head, at least with reference to one of its blades. See how the entire hold of the clam rests on one narrow rim, and please to observe that just in proportion as the hold is slender must the compression, to render it secure, be increased. Contrast the position and hold of this blade with that of the Barclay forceps. Note how the blades of the latter are equably and closely pressed against the surface of the head, and no comments will be necessary to assure all of the greater safety to the child in the use of this instrument.

(3) It can be used with less pain to the patient. I presume there are few practitioners here who have not remarked, and perhaps been perplexed at, the outcry of the patient, "You are cutting me," at the moment when, after a propitious locking of the instrument high up, we have begun to draw the blades down

firmly on to the head, and before we have made any actual extractive efforts. I have been annoyed and puzzled by this statement of the patient, fearing lest I had included some of the mother's tissues in the grasp of the instrument, when the favorable result would show that such could not have been the case. Now, my opinion is that the pain of which the mother so complains is referable chiefly to the distention which the edge of the forceps makes on the vagina in thrusting it away from the head, in the manner which I have just illustrated. As this stretching of the vaginal tissues is avoided in the Barclay forceps, it may be said that it can be used with less pain to the mother.

(4) And for identical reasons it will be admitted that the loose-lock instrument is proportionately less apt to injure the maternal structures.

(5) It follows, also, that a less amount of traction is necessary with this instrument, inasmuch as the blade is not forced to carry before it, as it were, a wave of distended vaginal wall.

(6) That the hold of an instrument grasping the head as it does, with both rims of each blade flat down upon it, accommodating itself to any inequality in the shape of the head, is unusually firm, needs only to be stated to be acquiesced in, but no consideration of the subject would give one who had not tested these instruments an adequate idea of their really remarkable tenacity of grasp. I invite any gentleman interested to seize this model head with any instrument he may choose, let it be never so stout and unyielding in its blades, and to say whether any such instrument has a firmer grasp than the comparatively delicate blades of this straight Barclay forceps. Turn the head in any and every possible and impossible position and you find this instrument ready to grasp it with "an iron jaw."

(7) In the event of a necessity for turning the head, it would prove certainly a safer instrument than the ordinary forceps, because there would be no outjutting blade to drag upon the vagina, and render the rotation more dangerous, difficult and painful. The blades of the forceps have been well likened to a pair of hands. The mechanism of the loose-lock instrument in seizing the head in a diagonal position may be illustrated by extending this comparison, so that the forearms represent the shanks.

Now if we place the hands upon a head with the occiput obliquely forward and toward the right hand, in positions corresponding to the blades of the forceps under consideration, we shall find that the right forearm is on a higher plane than the left, so that the ulnar margin of the right hand is about on a level with the radial margin of the left (representing the displacements of the blades in regard to the horizontal plane of the closed handles) and that the right hand is inclined slightly toward supination, while the left tends toward pronation, representing the "rotation" of the blades.

There is a certain disadvantage attending excessive looseness of the lock. All of its bearings tend to cause the blades to assume the normal position regarding each other, that is, to lessen and to destroy the displacements of rocking and racking.

Now, when the head is seized in a diagonal position, one of the blades is pressing inward and forward against a surface of the head corresponding to a diagonal diameter of its oval. While the other blade is pressing inward and backward at the opposite diameter, thus producing a very strong tendency to turn the head so that the longer diameters of the oval shall coincide with the conjugate diameters of the pelvic canal. Now, where the head lies with the forehead inclined backward, I know of no objection to this forced rotation of the occiput forward. But when, as usually happens with the head high up, the occiput is directed backward, the tendency of these forceps is to rotate it into the hollow of the sacrum, and thus greatly to increase the difficulty of the delivery. This forced rotation of the occiput is a movement so directly contravening the plans of nature, that I should hesitate to apply such an instrument to a head known to present with the occiput inclined backward. This tendency to rotate the head is sometimes manifested in the ordinary forceps, but, for obvious reasons, it is much less marked in them than in those with very loose locks. It would appear, therefore, that the movements in the Ziegler and Barclay forceps may be excessive, while in a genuine Simpson instrument there may be the proper measure of looseness of lock.

The rocking motion of the blades is most effective in the straight forceps, and it becomes less and less efficient as the axis of the blades departs from the axis of the handle. So that in

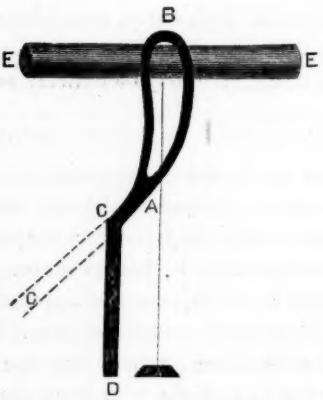
the very high-curved instruments, the movement is but little available, and if in them the rotation be allowed to be considerable, the hold of the instrument is destroyed. For where a rim of the forceps, because of a high curve, lies far to one side of the axis of rotation (the line of the handle) rotation outward, for instance, becomes (the rims being at the extremity of the long arm of the lever), a forcible lifting of the blade from its hold on the head. Fortunately, however, the hold of high-curved forceps with a stiff lock in high deliveries, is good when the curve of the instrument, or resiliency of the perineum is sufficient to allow of a proper grasp of the head. Thus the hold of the ordinary forceps with one blade over the occiput, and the other on the forehead is firm, and a similar hold over an oblique diameter is often strong. For such deliveries, it would seem desirable to retain the firm-lock, whereas, where the head is within reach of an instrument of moderate curve, as Simpson's, or in cases where the head is well down in the pelvis, the advantages of the loose-lock are available. I know no objection to the racking of the blades in instruments of high curve, and I believe the movement is desirable in such forceps. And for these a modification of the lock of Dr. Bond would, I think, be entirely suitable.

THE PRINCIPLE OF DIRECT TRACTION.

So far as I am aware, the first recognition of the departure from the proper line of traction in the use of the forceps with the pelvic curve was made by Levret in the modification of the curve of his instrument from higher to lower. Osiander, in the year 1799, recognized the necessity of applying tractile force in another direction than the line of the shanks. In his instructions for extracting the head, he advised that the operator place a folded towel over the lock of the instrument, and in the standing position, bear heavily downward upon this pad with one hand, while traction was made in the ordinary way with the other. Osiander sought here, by applying two forces—one downward and the other downward and forward—to cause, as a resultant of these, an actual extractive force in the direction of the pelvic canal.

In setting forth what is known to me as to instruments intended

to draw the head through the pelvis by a force applied in a direction perpendicular to the plane of the pelvis at which the progress of the head is opposed, perhaps I cannot follow a more natural course than to give an outline of my own efforts to construct a direct traction instrument. The first fact which struck my attention was that the pelvic curve of most forceps was not in correspondence with the actual curve of the pelvis. It seemed advisable, therefore, as a first step toward producing a direct traction instrument, that the second curve should be made to correspond with that of the pelvis. This being done by a proper shaping of the blades and shafts, it became evident that the line of traction fell far below the plane in which, in the ordinary methods of forming the instrument, the handles would lie. Accordingly these were depressed so as to form a decided angle with the shanks, so that the line of the handles should be parallel to a line drawn perpendicular to the axis of a cylinder of about the diameter of the head. held within the grasp of the forceps.

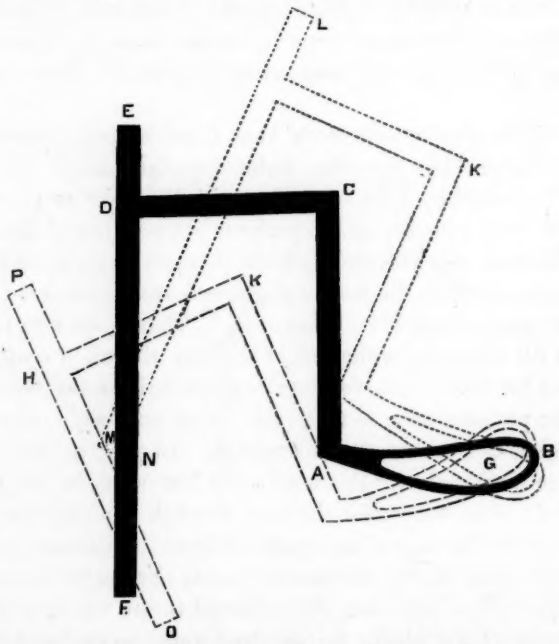


I may make clearer my meaning by means of this drawing, A B representing the blades and shanks curved as the pelvis. Now, in place of following the ordinary methods, and forming the handles in the direction of the dotted lines, C C, they were depressed to the point D, to such a degree that the plane of the handles, D C, should be parallel to a line perpendicular to the face of a cylinder, E E, held in the tractile grasp of the blade, A B.

I supposed that instruments so formed would possess three decided advantages: first, facility of introduction and easy coaptation to the head; second, the status of the handle relatively to the blades would cause the latter to give some idea of the line, perpendicular to the resisting circle of the pelvis, in which traction should be made; in other words, the direction in which the handles were pointing would indicate the direction in which traction on them should be effected; third, traction in the line of the handles would be perpendicular to the plane of resistance—that is, direct. And upon trial of instruments made after this plan upon a model, they held very well when the head was seized in a long or oblique diameter, and well also when applied over the sides of the head. In the latter position, however, the hold was only firm when traction was carefully made in the line of the handles. This could be done only by vigilantly guarding the ends of the handles near the lock from rising upward (toward the points of the blades) and by preventing a corresponding depression of the opposite ends.

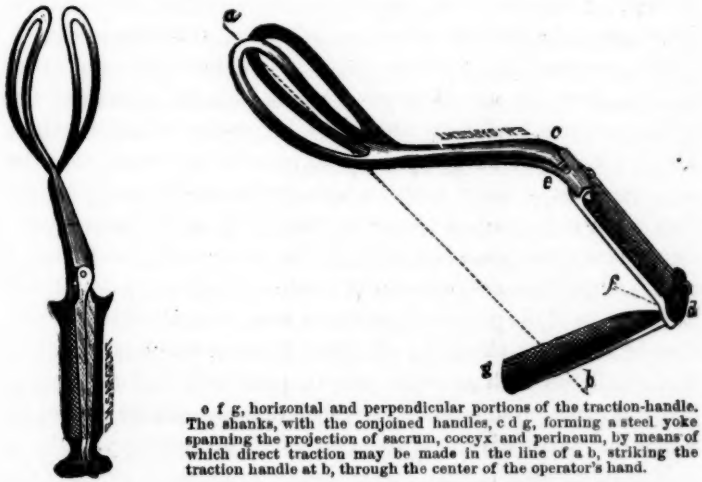
It will be seen by this model that traction made at any points on the handles in a direction parallel to the axes of the blades tends to draw these points into line with the point or place of resistance on the blades, and experience at once showed that unless this tendency was successfully resisted, there was a great liability of the clams, when the head was grasped over the ears, to slip off, as Chapman expressed it, "sideways." That is, the forceps yielding in the direction of the line of traction, slip off in a line about midway between a line representing the axis of the blades, and another perpendicular to that axis. This tendency to slip was so decided as to condemn the instrument. In fact, in two cases in practice it slipped over the head when low down, in the manner detailed, after successful delivery through the superior strait, although in the hands of expert obstetricians. It became necessary, therefore, to alter the instrument so as to obviate the tendency to slipping. The first plan that occurred to me was to extend the lower rim of the blades farther backward, as in the forceps of Johnson, Davis and others, in order that the parietal protuberance should present an obstacle to the slipping off of the instrument in the direction stated. Careful test of forceps, provided

with such a curve, demonstrated that the hold obtained by the widening of the blades was yet insecure. I then thought of pulling by a thong passed through the fenestræ imitating in this, as I believe, some of the older writers. This plan on the model gave quite satisfactory results, but practically it was not of much value, for in order to the successful use of the thong, it was necessary that it be pulled upon in a line farther back, than the perineum would admit of in the majority of cases. I had, a year ago, noticed the peculiar supplementary handle of the forceps of Dr. Hobbs, jutting downward from, and perpendicular to, the ordinary handles, and a trial of his instrument on the model, showed quite a firm hold. I began to conceive that this handle was of value for other reasons than that it presented an opportunity for powerful traction. It then occurred to me that having, as we



do, a connection between the handles and the blade by means of two stout steel rods, the shanks, it ought to be practicable to draw on the head in the desired direction. I pictured to myself the above diagram.

A B being the blades of my forceps, A C the shanks, and C D the handle. Now, if a bar were firmly attached to the extremity of the handle at D, extending perpendicular to C D to the points E and F, we should be able to make the following demonstration: Let G represent the point of resistance, and in our experiment, a pivotal point. Now, if traction be made at E, the tendency of the apparatus would be to assume the position indicated in the dashed lines H K A. On the contrary, if traction were made at F the apparatus would tend to move into the position of the dotted lines M L K. Now, therefore, as a force at E moves the handle C D in one direction, and a force at F moves it in a contrary direction, there must be some point between the points E and F at which the handle, C D, will move neither in the one nor the other direction, as the point N. *This point would be the point of direct traction.*



e f g, horizontal and perpendicular portions of the traction-handle. The shanks, with the conjoined handles, c d g, forming a steel yoke spanning the projection of sacrum, coccyx and perineum, by means of which direct traction may be made in the line of a b, striking the traction handle at b, through the center of the operator's hand.

BARTLETT'S DIRECT TRACTION FORCEPS.

I had, therefore, only to attach to my forceps, a handle like that of Dr. Hobbs, and of such length as to enable the hand to grasp it at the point of direct traction determined by trial, to perfect my instrument—to make it what I had proposed to myself in the beginning, a direct traction forceps. I had this

handle constructed so as to be instantly attached or removed, and in no wise to interfere with the manipulation of the handles. The practical question now was whether the new supplementary handle would successfully overcome the difficulty of slipping off sideways of the blades. Please to give your attention while I test the instrument on the model. You see, without the new handle, when traction is made in something of the old way, as in the ordinary forceps, the blades slip away from the head with a facility which is surprising; whereas, when the handle is applied, the tendency to rising upward and slipping of the blade is entirely overcome, and though having an unusually high curve, they hold with the tenacity of the straight forceps. In the use of these instruments, one acquires a tact which enables him to feel when the hold is insecure, or the reverse. When my forceps are applied without the new handle, the *feel* of the hold is suggestive of great insecurity; whereas, when the new handle is applied, the sensation imparted to the hand is that of an inflexible, unyielding grip.

Observe that the point at which it is necessary to apply the traction force in our illustration, varies with the portion of the surface of the blades at which the resistance actually exists. Thus, if the head be grasped by surfaces of the blade near the end, the point of direct traction rests farther below on the handle than when it is grasped nearer to the shanks of the instrument. Occasionally the head is seized by the lower rim of the forceps only, and in this case the point of traction falls lower down on the handle than if the points of resistance were on both rims. It will thus be seen that the point of direct traction varies on the traction handle an inch or more, but in practice it is thought that this will make no difference, provided that a point be chosen at which the traction is the lowest that might be necessary.

It is interesting in this connection to note that in practice the actual point of direct traction on the handle may be determined in any given case by trial. Thus; if a piece of tape, a foot in length, be looped on to the traction handle far toward its junction with the ordinary handles, and traction be made from its free extremity, it will be observed that the angles formed by the tape and the traction handle are not right angles, and that the obtuse angle faces that end of the handle farthest from the tape.

Whereas, if the thong be looped on far toward the other, free end of the handle, and traction be then made by it, the obtuse angle then formed faces in the contrary direction. And it will be found that the degree of deviation of the obtuse angle from a right angle, in either case, may be increased by carrying the tape yet farther toward that extremity of the handle to which it is then the nearest, and that on the contrary, the obtuse angle approaches more and more to a right angle according as the test cord is slipped along on the handle in the direction toward which the obtuse angle faces; so that presently we find it resting upon a point where the obtuseness of the angle has vanished and the tape and handle stand at right angles. *This is the exact point of direct traction for the resistance offered at the moment of trial.* It should be added that the determination of this point may be effected in less time than has been occupied in the recital of this account of the method of determining it.

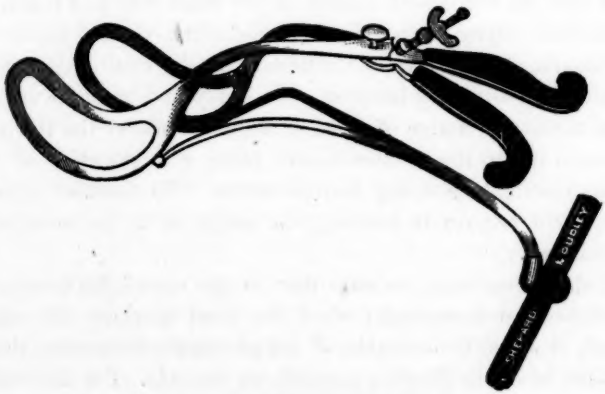
In the use of this instrument it is sometimes desirable to bind the handles together, not only for the reasons which suggest this procedure in ordinary forceps, but that the whole instrument may be allowed to rotate with the head, if need be, in the loose grasp of the traction hand, free to turn on the admirable swivel formed by the joints of the forearm. Now, that compression may be completely under the control of the operator—instantly applied, regulated or removed—the following device has been adopted: The handles are bound loosely in the usual way and place, with a suitable thong of lace leather, including in the ligature the horizontal plate of the supplementary handle resting immediately beneath the ordinary handles. To apply and regulate compression, a suitable wedge of wood is adjusted under the thong *i. e.* between it and the traction handle plate, with the effect of tightening the ligature to any desired extent. To diminish compresion, or to remove it entirely, the wedge is to be retracted, or withdrawn.

I should not omit to state that in the use of the forceps here described, more especially when the head is above the superior strait, it would be desirable, if not absolutely necessary, that the patient be in the English position, on the side. For the traction, the woman being on the back, would, in a high application, be so

nearly downward that it could not be effectively applied. As to the great majority of practitioners in this country, the application of the forceps with the patient on the side would be novel and awkward, it would seem better to apply them in the dorsal position, and then place the patient in the English attitude.

THE HOBBS FORCEPS.

I desire next to call your attention to two other direct traction instruments, both of which were constructed before the one which I have just described. The more recent of these is that of Dr. John O. Hobbs; the earlier, that of Dr. Tarnier, of Paris. Dr. Hobbs modeled the blades of his instrument, in their general shape, after those of R. W. Johnson and Tarnier; they have a pronounced perineal curve. To make his forceps more effective, he added the very ingenious handle, to which reference has been made. This handle—a device which, as I believe, will mark an era in the construction of the forceps—not only enables the operator to pull with ease and force, but it, as demonstrated above, by lowering the point of traction, tends to make it direct.



THE TARNIER FORCEPS.

I now call your particular attention to the peculiarities of Tarnier's forceps. The shafts and blades have the old perineal curve, and reach quite high into the pelvis; the handles are used as those of any other forceps, *except that they are not intended for extraction;* they are provided with a screw, by which they may be held closed upon the head. The distinguishing peculiarity of the instrument is this supplementary piece, by which traction is made. It is a properly shaped bar of steel, provided at one end with diverging branches intended to hook into the shank end of the blades, while the other end, curved downward, has attached to it a bar by which traction may be made with both hands. Dr. Tarnier, in the addition of the tongue or hook-piece to his forceps, had evidently despaired of utilizing the shanks as a means of traction. He used the rod with the intention of drawing it as directly backward as the perineum would permit; and remark particularly that the cross-bar is not attached to the traction tongue close to the handles, but that it is bent downward an inch (2.5 ctm.) or more before this attachment is made. The depression downward of the bar is not, as some suppose, simply to remove it to a convenient distance from the handles, but to give to the instrument the power of a direct tractor.

The blades of Tarnier's forceps are not intended to be held together by the hand, but by means of the screw. One object of this modification is to allow the handles and the entire forceps liberty of motion, so that the natural movements of rotation, etc., of the head may take place without that restraint which the hold of the hand on the handles might occasion. Dr. Tarnier illustrates how these movements of the head are imparted to the forceps-handles on a manikin, the pelvic cavity of which is provided with resilient rubber walls so that the head in passing through it undergoes the ordinary movements incident to the mechanism of labor. We have not at hand a manikin of suitable kind, but the capability of movement may be perfectly shown by passing the blades grasping a model head through any suitable compressing surfaces, the irregular faces of which, like the planes of the pelvis, invite adaptive changes in the "position" of the body passing. Thus, if one, while seated, grasp the blades of the Tarnier forceps, closed upon a model head, between his apposed legs just

below the knees, and draw upon the cross bar so as to cause the head to emerge between the thighs just above the knees, he will observe that the handles of the index forceps indicate the changes in rotation imposed on the head by the resilient walls offering it resistance. If the handles of my instrument in like manner be secured by a thong or elastic, and traction be made upon the traction handle by a loosely grasping hand, something of the same facility of movement is observed as in the original index forceps. I may here add, parenthetically, that I have taken the liberty to correct the translation of the words which Tarnier employed to designate his forceps, *Forceps à aiguille*, so that the idea embodied in the French may be retained in the English, the strictly literal rendering of the word *aiguille*, as usually translated, destroys its significance.

Though this forceps is complicated and awkward it is said to be readily applied and very efficient. It certainly holds admirably, and is a direct tractor. It would seem to me, however, in view of the manner in which the traction is made in my instrument, through the shanks, that there is no necessity for the hooked tractor of Tarnier.

It may and doubtless will be objected by some that there is no need of a powerful forceps—that there is power enough in any of the standard instruments to deliver, where delivery is possible. It is true that in the majority of cases, especially with the head low down, the ordinary style of forceps answers very well, but it is not to be denied that occasionally cases occur, and not very infrequently, in which the practitioner finds his strength exhausted, and feels the necessity of calling in assistance. At other times, the aid of the inexperienced, as of the nurse or husband must be invoked. Occasionally it happens that, through sheer exhaustion of the medical attendant, a failure to deliver occurs, and the perforator is brought into use. Any instrument which lessens the labor of forceps delivery, is of marked advantage to the obstetrican and the parturient, the more especially when the diminution of force required is effected by causing traction in the true line, and thus avoiding unnecessary pressure upon the tissues of the mother, and needless compression of the head of the child.

Recently these forceps were used in a case in which their efficiency was so strikingly shown, that I may briefly refer to it. Dr. F. Henrotin employed them in the delivery of a woman whom he had attended in four previous labors; in three of these, using the forceps, and on the other occasion turning, and in each instance experiencing great difficulty because of a narrowing of the conjugate, and a tilting forward of the womb, so that, as the woman sat, the abdominal parietes rested on the thighs. When called, at the recent confinement, Dr. Henrotin found that the woman had been in labor about twenty hours, and that the liquor amnii had been discharged fourteen hours. There was marked anteversion of the womb, and by introducing the hand, the head was felt, resting with its side above the pubic bones, and the vertex impinging against the promontory, the os being dilated to a diameter of two and one-half inches, and dilatable. Immediate recourse to the forceps was determined on. Dr. Henrotin introduced and adapted the blades readily, and delivered, with slight effort in less than fifteen minutes, to the surprise of himself and other physicians present.

DISCUSSION.

DR. MILLER had been greatly interested in the able paper of the essayist. The forceps which the author had invented he thought very ingenious, but he feared a little too complicated and powerful for ordinary use. There was such a thing as a forceps being endowed with too much force; there was a limit to the force which can be invoked, beyond which it was not safe to go. A man of ordinary strength possesses all the force that prudence will allow. He believed that every power of the obstetric forceps should be controlled by an intelligent operator, and any change in the instrument which tended to lessen the required degree of intelligence was not a safe departure. The speaker once heard Lee say, at the close of an hour's lecture on the obstetric forceps, that, in his opinion, there had been no real improvement of the instrument since the days of Chamberlen. While he could not accept this extreme view, he believed it would be unfortunate for the woman if the forceps ever became such a perfect machine as to require less intelligence on the part of the

operator in its use. Dr. Miller gave preference to a slight pelvic curve in the forceps. Above all, he thought it a matter of importance that the operator have a practical acquaintance with the particular instrument which he used. In conclusion, Dr. Miller said: The prudent operator will picture to his mind at all times the exact relations which exist between the head and pelvis and also the relations of his forceps to these parts. It was essential that his mind be occupied with these facts, and one objection which he raised to the instrument in point, was that the operator's attention was necessarily diverted from this by the manipulation of the complicated handles.

DR. ROLER said the paper had been an instructive one to him. Concerning the forceps which had been exhibited he feared it was endowed with too much power. In reality but little compression of the head was required in the great majority of cases. It was essential that the blades be applied exactly opposite each other, and when so applied the instrument could not slip. With regard to direct traction he thought that too much stress was laid upon it; we have an exaggerated idea of the pelvic curve. By directing the traction backward, with the hand bearing downward upon the instrument, as recommended by Osiander, and recently by Byford, one could exercise traction in the proper direction by means of the ordinary forceps.

DR. FITCH admired the ingenuity of the essayist as shown in his new forceps, but he thought them too complicated. The operator must at all times be conscious of the degree of pressure which he is exercising as he cannot be with the instrument in question. Notwithstanding the stress which had been laid upon the racking movement of the blades in a loose lock, he preferred the Siebold lock. Dr. Fitch called attention to the importance of one feature which is almost universally omitted in forceps, viz: the turning out of the tips of the blades, which enabled the operator to pass the instrument through a partially opened os with the greatest ease.

DR. JENKS thought the paper a very complete exposé of the mechanics of the different parts of the obstetric forceps. As a matter of history he desired to say that it was now generally admitted that Pugh added the pelvic curve to the forceps, fourteen years

before it was mentioned by Smellie. The speaker dissented from Dr. Roler in that he had seen the forceps slip even when the blades were perfectly applied.

DR. NELSON said it was of the greatest importance that the compression of the head be intermittent for the safety of the fœtus, and for the integrity of the soft parts of both the fœtus and woman. He had known of one case of extensive sloughing of the scalp from too continuous traction, and two instances of destruction of the fœtus by pinching a loop of the umbilical cord, results that might have been avoided had the traction been intermittent.

DR. MERRIMAN said that one pair of forceps was not sufficient for all cases. On the whole he preferred Elliott's instrument, though he had known it to slip once or twice. As a rule a great curve of the instrument is not required, even in the high operation; the perineum can be pushed back so far as to permit traction to be made in the proper direction even with a nearly straight instrument. The speaker alluded to the very uncomfortable and awkward position which the operator was obliged to assume in making traction downward and away from his body in the high operation. Dr. Merriman also said there were cases in which forceps without handles were serviceable.

DR. SAWYER said that the uncomfortable position of the operator, spoken of by Dr. Merriman, could be obviated and many other advantages gained by placing the woman upon the side; he had adopted this position during the past two years and was now convinced of its superiority. It is a significant fact that the French and Americans who are confined to the back position feel the need of the perineal curve in the forceps, while the English, who place the woman upon the side, often use the straight forceps. As confirming the truth of what Prof. Miller had said, that an operator uses that instrument best with which he is the best acquainted, it was interesting to recall the very important results in Dr. Hamilton's practice, in Falkirk. This gentleman uses only the Zeigler straight forceps, and, what is strangest of all, he applies the instrument in the antero-posterior diameter of the superior strait.

DR. EARLE said there were undoubtedly cases where extrem

force was required to complete delivery. He spoke of one case where the combined strength of both Dr. Fitch and himself was called in requisition.

In closing the discussion, Dr. BARTLETT said that the objection that the instrument was complicated was rather apparent than real. While in simple forceps delivery he would not select such an instrument, in a difficult case, he believed it would be more easy of application, and more efficient in action than the ordinary forceps. Nothing but prolonged experience would give that *tactus eruditus* which should determine just what amount of downward pressure, and what measure of traction would produce a resultant force sufficient to counteract the errors of construction of any given instrument. Whereas the mode of using the forceps he presented, was readily understood, and it being properly applied, and the hand placed over the proper point of the traction handle, a novice would hardly pull in the wrong direction.

Imperfect description on his part had probably led to a misapprehension as to the mode and measure of compression to be used with the instrument. He called attention to the fact that the handles were so arranged that if the operator preferred, he might make compression with his hand as in the ordinary forceps. The thong and wedge attachment were devised with the express intention of placing the compression completely under the control of the operator; by their use the compressing force could be applied, regulated or removed in an instant.

It had been said that it was essential in order to the firm hold of the forceps that the blades be applied the one exactly opposite to the other. So far as the instruments with a rigid lock were concerned, the statement was true, but it required only a glance at the model head held in the racking blades of the Ziegler forceps to show that the remark did not apply to instruments of that class.

In regard to the pelvic curve, there should be no discrepancy of opinion, as it might be said to be a fixed quantity, and no less, the speaker ventured to say, than that of the forceps he recommended.

It had been stated that higher curved instruments were not needed because the perineum may be so far pushed back toward

the coccyx as to render possible the employment of ordinary instruments. He would call attention to the fact that in this procedure the forceps acted as a powerful lever, and that, while the blades might retain their grasp on the head, in such a manœuvre, and the perineum be forced backward, the contrary might happen, namely: the perineum might *not* yield, and the blades might be forced from off the head.

Dr. Bartlett called attention to the fact that in the use of the straight forceps antero-posteriorly, the blade of the instrument toward the sacrum while holding the head in its grasp, presented a curve very nearly corresponding to that of the parturient canal.

Referring to the trouble experienced in introducing the second blade, which Dr. Fitch had mentioned, Dr. Bartlett stated that in the ordinary dorsal position for forceps delivery, the thigh of the mother sometimes interfered with the free movement of the handle of the instrument laterally. In such cases he had the thigh raised to a right angle with the body, the assistant resting the leg over his shoulder.

ARTICLE II.

THE EARLY TREATMENT OF BURNS AND SCALDS.

E. FLETCHER INGALS, M.D., Lecturer on Physical Diagnosis and Diseases of the Chest, Rush Medical College. Clinical Professor of Diseases of the Throat and Chest, Woman's Medical College.

On the 24th of October last, I was summoned by telephone to see Mr. L—— A——, a vigorous man forty-nine years of age, who had just met with a severe accident.

I met the patient when he was brought home, about three-quarters of an hour after having been severely scalded.

In passing through the factory he had stepped on the cover of a catch-basin, which received the exhaust steam from the boiler; the cover suddenly gave way, and he was percipitated into the boiling water beneath, which covered the feet and legs nearly to the knees. The legs must have remained in the water for several seconds, and the patient thought they were immersed a second time before he could extricate himself from his painful

position. The man's cries brought help, and he was carried into the office, the shoes removed, and cotton dressings saturated in carron oil, applied to the burns.

While the patient was being brought into his house, he was taken with a severe rigor, for which a large dose of whisky was administered. I examined the legs and found them burned from about an inch above the soles of the feet, to within three or four inches of the knees, making a scald on each leg a foot in length, and encircling the entire member. The tissues were burned most deeply just above the ankle joint.

The rigor continued notwithstanding the whisky. I at once ordered a tub of cold water, in which the patient's feet and legs were immersed with the effect of instantly relieving the pain, and at once overcoming the chill. The water was used just as drawn from the hydrant, and stood at 67° F. I found that if the temperature of the water rose only a few degrees, the burning pain would return, therefore I ordered that the temperature be kept at 67°, either by means of pieces of ice or by changing the water.

I gave no more whisky and no anodyne as none was needed. I directed the patient to keep the legs constantly in the water for six or seven hours, and longer if necessary, to prevent the return of pain, and that the temperature should be gradually increased but always kept low enough to prevent smarting.

When I returned in the evening, I found the patient perfectly comfortable, with his feet still in the water. He had removed them once or twice for a few minutes, but as soon as smarting returned they had been again immersed.

I now wrapped the legs in oiled cotton and put the patient in bed, but left directions for him to again put the feet in water if pain returned. The next morning, I found that the patient had remained about an hour in bed, when it became necessary to put the feet again in water. Subsequently the cold water treatment was continued with only slight intermissions until it had been used altogether for seventy-four hours, at which time it became unnecessary as the pain did not return. The temperature of the water had been gradually increased until during the latter part f the treatment, when it stood at nearly 100°.

In instituting this treatment, I was guided by personal experience in the case of a small but deep burn, and by the well-known fact that cold water will relieve the pain of burns and that such injuries if of any considerable extent are very likely to prove fatal in consequence of constitutional disturbance, caused by the pain and inflammation.

The question in my own mind as to the injurious effects of such long immersion in cold water, was answered by reference to the experience of Captain Webb, who spent eighteen hours in the English Channel without apparent detriment to his health.

Quite an extensive experience in the care of burns, in the hospital, after the fire in 1871 and the subsequent care of several scalds, convinced me long ago that the proper course to follow in recent burns or scalds was the one which I pursued in this case. I have frequently suggested the method to other physicians, but have always been met by reference to the well-known dressings of lead, carron oil, bismuth, etc., etc., all of which have long been found useful, but none of which will stop the pain, or so limit the inflammation as the popular and easily accessible remedy, which was used in this case.

When the use of cold water became unnecessary in this case, the legs were dressed with white lead and cotton, which was kept on until suppuration occurred; subsequently the separation of sloughs was favored by poultices and in sixteen or seventeen days from the date of the injury the dead skin had all been removed and the ulcers presented a clean and healthy appearance.

I found that the skin had been burned in varying degrees from near the sole of the foot to the upper part of the calf of the leg; in some places only the outer layer having been destroyed, while just above the ankle on either leg, a strip of skin, varying from two and one-half to five inches in width, had been destroyed throughout its entire thickness.

The effects of the cold water were now very marked in the evident limitation of the inflammation. In many places from one-fourth to three-fourths of the entire thickness of the true skin had been destroyed and the lower layers remained intact. In still other places, nearly the whole thickness of the skin had been destroyed, leaving here and there, small points of the deeper

layers, one or two lines in diameter. I have never seen such small portions of skin saved by any of the ordinary methods of treatment, under which, it seems to me, the tendency of inflammation to involve the entire thickness of the skin, would certainly have been fatal to these. From all these points new skin was rapidly formed, so that in a short time the greater portion of the sores was healed.

The only unfavorable symptoms during this time were a few intermittent chills and fever, which were readily checked by quinine; nervousness, which prevented good sleep, for the first two weeks, and occasional, irregular pains in different parts of the legs. However, the patient never lost a meal and constantly improved in flesh throughout his confinement to the house.

About the end of the fourth week several small grafts of skin were inserted in the ulcers and Martin's rubber bandages applied. Skin-grafting was subseqently practiced several times, but only five or six of the points grew; caustics were used occasionally toward the latter part of the treatment to cut down exuberant granulations which were not wholly controlled by the bandage. The bandage was kept on the legs until recovery was complete and is still worn for support during the day. The patient began to walk about in six or seven weeks and was out of the house December 27th and the case was completed a few days later.

From my experience with this and other methods of treating scalds and burns, I feel confident that the cold water dressing is the best in all cases where it can be applied soon after the injury has been received and probably it would be best in all cases if applied any time after the pain is felt, and continued constantly, with gradual elevation of the temperature, until it ceases.

This treatment will stop the pain and prevent the constitutional disturbance which it would occasion, thus enabling the physician to save the lives of many patients, who would otherwise die of shock.

It will limit the resulting inflammation to the minimum degree and thus preserve the greatest possible amount of tissue.

If the temperature of the water is gradually elevated as the burning pain disappears, and the treatment is discontinued when this has been accomplished, no evil results need be feared, but

the physician may have the satisfaction of giving his patient the greatest possible relief, at the same time preventing further destruction of tissue and probably restoring much that has already been injured.

The treatment must be continuous in order to be productive of the best results; probably it would be hurtful in some cases if used intermittently.

The laity should be instructed, in cases of burns or scalds from burning clothing, hot water, steam, etc., to immediately immerse the parts in water cold enough to relieve the pain and to keep them in that condition until the smarting or burning would not recur and until a physician could be summoned.

If this plan were adopted there is good reason to hope that many of the extensive, but superficial burns, which usually prove fatal, might be transformed into slight injuries, and many of the ugly deformities which originate in these accidents might be prevented.

188 Clark St., Chicago.

ARTICLE III.

HOUR-GLASS CONTRACTION PREVIOUS TO THE DELIVERY OF THE CHILD. Paper read before the Northwestern Wisconsin Medical Society in December, 1879. By J. R. MOORE, M.D., Member of Committee on Obstetrics, New London, Wis.

Nov. 1, 1879.—Called at eight o'clock, a. m. to see Mrs M——, in confinement. Nativity, American; in stature above the medium size and very muscular; age, forty years and pregnant with fourth child.

'Had been sick the greater part of the night, and first stage terminated about six o'clock, a. m. with a very abundant discharge of liquor amnii, after which pains became regular and severe at intervals of about ten minutes.

On making an examination, I found the os well dilated, soft and flabby, and the head, which was presenting, seemed determined to force its way in front of and to the right of the symphy-

sis pubis (right iliac region). The abdominal walls were flabby, owing to the loss of tonicity from the large abundance of water so recently discharged, and uterine contractions powerful.

My first impression was, that with a few pains I would be able to dislodge the head and bring it within the axis of the superior strait. This I set myself about, and, between pains, I could bring it so that it seemed that it would engage itself within the brim of the pelvis; but, directly as the pain returned, it would return to its former position.

And for three long hours, I thus, with my fingers, tried to change the position of the head, but in vain.

The pains now had become so severe that during them I was obliged to allow the inhalation of chloroform.

Externally, the outlines of the head could be distinctly felt in the right iliac region and even slight pressure occasioned great pain. Waiting till eleven o'clock, three hours from the time I first saw her, and seeing no advancement whatever, I made another attempt with the vectis to change the position of the head, which I could do between pains, as before, but directly as pain returned, back it would go.

Of course, every advantage was taken of position and every external appliance imaginable made use of, such as bandages, counter-pressure with the hands over the tumor, etc., but all in vain; and at two o'clock, p. m., eight hours from the termination of the first stage, there being no change whatever, only a more exhausted condition of the patient, I called in Dr. P. Dickinson, who lived near by, in consultation.

After making an examination, the doctor concluded (as I had thought) that time would overcome the evil and force the head within the brim of the pelvis. So, with a determination to succeed, he went to work as I had done for so long a time; and thus he worked for two hours, with the same result. At the end of which time the patient showed great signs of exhaustion, with a quick, sharp pulse, lips dry and parched, tenderness increasing rapidly on pressure over abdomen, muttering delirium when slightly under the influence of chloroform and pains still frequent and very hard. Making an examination again, and finding no change in the presenting part, I was now firm in the belief that

some other alternative must be resorted to, and that at once or our patient would die before delivery could be effected. In this the doctor agreed with me, and we concluded to try and grasp the head between the blades of Hodges' long forceps and see if we could not effect a delivery by that means. But with the presentation *occipito-iliac* this was an utter impossibility.

Failing in this, which of the other two alternatives must be resorted to, viz, craniotomy or version? The condition of the patient seemed to favor the former method, while the general impression would be to turn. And this we fortunately concluded to do. So, placing the patient in the proper position, viz, on her back, and allowing the free inhalation of chloroform, I proceeded to find the feet. The pelvis was roomy and the soft parts offered but little resistance, also the uterus until I passed the head. But here I found as great a constriction as is possible to find in hour-glass contraction after delivery of the child—the secret of the whole mischief.

Below the constriction there seemed to be but little muscular contraction, but at and above, it was indeed powerful. I at once began to dilate this constriction, but it was so great that it was with difficulty that I could pass the end of my index finger under it. You can rest assured that it was no simple matter to dilate it sufficiently to admit the passage of the hand. But this I at last accomplished, secured a foot, and, after some little difficulty, succeeded in turning and delivering a living boy, weighing eight and a half pounds, being smaller than any of her children before it. After delivery of the child, hour-glass contractions again followed, which we were obliged to overcome to remove the placenta. But this was not difficult, as there was no unnatural attachment between it and the womb. It was attached near the fundus.

This is the first instance where I have known this form of contraction to exist before the delivery of the child, and indeed I can find nothing in obstetrical literature which bears directly upon this point. Cazeaux, Meigs, Velpeau, Byford and others dwell at length upon *irregular* contraction, etc., but say nothing of this form, which may exist, as is here proven, to such extent as to require surgical interference to effect a delivery.

And is it not possible that we may have this difficulty to deal with many times when we are not aware of its true nature? As in this case, if we had resorted to any other method of procedure, as craniotomy, or the use of the instruments if the head could have been grasped, we might have met with great difficulty in removing the body of the child from above the constriction. But if it had been accomplished, we would never have been the wiser as to the true cause for surgical interference.

But why not have hour-glass contraction *before*, as well as *after* the delivery of the child, if there is an opportunity for it? And what I mean by an opportunity is this, viz., suddenly changing the womb from a *highly distended* to an *empty* condition, or in other words, from a condition where the walls are extremely tense, to one of flaccidity, as in this case, when the liquor amnii was discharged, as there was a superabundance of it. I was not present at the time, but the attendants declared that there was no less than a pailful.

I am firm in the belief that, without this sudden change in the condition of the womb, this form of contraction will not manifest itself, having no faith in the theory that any attachment of the placenta can exert any influence whatever in that direction.

But let the cause be what it may, we can only theorize as to that. But we know that it may give rise to a very unpleasant state of affairs.

And ought we not to look carefully for this obstacle when surgical interference seems necessary, and try to overcome it before resorting to a more hazardous undertaking?

NEW LONDON, WIS., Jan. 30, 1880.

ARTICLE IV.

ON THE MECHANICAL TREATMENT OF POTTS' DISEASE. A New Apparatus by Mr. Gemrig, of Philadelphia. By Dr. GEO. F. SOUWERS, Philadelphia.

There is, perhaps, in the wide domain of surgery no disease the treatment of which has of late years attracted so much attention

as caries of the spinal vertebræ, or, to employ the name commonly given the trouble, Potts' disease of the spine. Blisters, cauteries and various bandages and devices have rapidly followed each other; each has had its day, served its purpose, and been relegated to a greater or less degree of oblivion. It may not be uninteresting to the general practitioner, and to those not in the neighborhood of the large cities and hospitals, to consider some of the different forms of apparatus, etc., that have been and are still used.

In the early stage of the disease, before deformity has become particularly noticeable, the best form of apparatus, probably, is the bed. The patient should be placed in the recumbent position on a strong hair mattress, from which a U-shaped piece has been removed, for the easier introduction of a bed-pan; this position should be maintained until either the patient is fairly recovered, or until it becomes evident that more decided measures are necessary for his relief. As to the employment of cauteries, etc., in this stage we shall say nothing, this paper having only to do with the purely mechanical treatment. Probably the simplest and cheapest form of apparatus—when the stage for mechanical interference arrives—is the plaster jacket, so much employed by Dr. Sayre, of New York; it presents the advantages of support to the yielding column and readiness of application. The method of making and applying this jacket is as follows: Into the meshes of coarse crinoline or Swiss muslin, dry plaster of Paris is rubbed, the crinoline being in strips about two or three inches in width; this is made into an ordinary roller bandage, which should be put away in an air tight box till needed.

When it is desired to use the bandage it is dipped *end* first into cold water and applied as follows: A thin close fitting gauze sleeveless shirt, having loops to tie over the shoulders, is placed on the patient, the bandage is then carried round the body, each lap covering one half the previous turn; over the stomach a pad is placed, which can be drawn out before the plaster has thoroughly set; over the laps of the bandage wet plaster is rubbed, and the whole is then allowed to dry.

The patient while being bandaged should be suspended, either

by bands passing under the axilla, or by a halter catching the chin and occiput. A very convenient apparatus for this purpose is here figured (plate I); or a hook having been driven into the ceiling answers the same purpose. In an institution with which I am connected, a beam of wood is placed between the ends of two book-cases, which occupy a corner, and from the beam an ordinary block and tackle is suspended. For the purpose of securing greater supporting power, narrow strips of tin are placed around the body at intervals of two or three inches, after two or three layers of the bandage have been applied. The chief objection to the plaster bandage is its liability to crack, and in places to chip off; this should of course be watched and remedied as soon as it happens. Further, ablution is not as readily performed as is desirable, and this of course is objectionable; though taking the bandage as a whole, its good far outweighs its evil features. Without any discomfort it may be worn for months, if so desired.

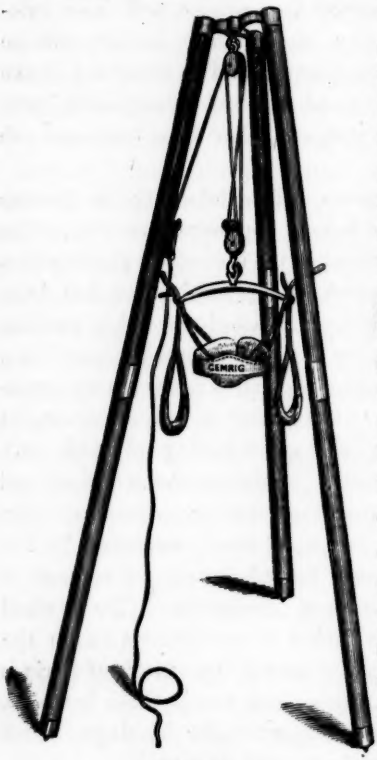


PLATE I.

Another form of this bandage is the silicate dressing, the principles of which are the same, to wit, a strong, supporting, unyielding box, which shall act as it were as an external spinal column. Stiff binder's board, wet and moulded to fit the body, or strong felting, will also answer a good purpose.

In those cases where there is but a slight tendency to spinal curvature, a jacket such as is here shown (plate II) answers a

PLATE II.

good purpose. The lower or abdominal portion of the apparatus being elastic, whilst the thoracic portion laces up. The weight of the head and shoulders is transferred by two crutch heads, which fit into the axilla through a steel straight spring to the hips. In cases of lateral curvature, a somewhat similar apparatus, to which a pad has been added, as figured below (plate III), may be employed. As a support in posterior curvature, the apparatus here depicted has some advantages. A pelvic band supports two lateral crutches, which reach up to the axilla. Posteriorly, an upright fitted with an axillary strap extends up on either side of the spinal column.

There are, of course, many other and varied forms of apparatus, but it is a question whether the instrument lately contrived by Mr. Gemrig, of Philadelphia, and described below, does not present greater advantages than any now in use. This apparatus, which has been very successfully employed in the Pennsylvania Hospital, in Philadelphia, and the manner of making it, may be described as follows: An accurate mould of the trunk is taken by means of the plaster jacket, the patient of course being suspended; before becoming entirely set the jacket is cut open in front, in the middle line. Into the mould thus obtained a quantity of mixed plaster is poured, and this on hardening presents a perfect cast of the suspended body. A

PLATE III.

piece of thick, half tanned leather, thoroughly saturated, is now applied to the cast thus obtained, and having been accurately molded into position, is allowed to dry. Upon examination after drying, the cast is found to be so accurate that even the intercostal and intermuscular spaces are clearly shown in the leather. The dried jacket is now lined with fine chamois skin, cushioned at the axillary edges, and fenestræ cut in it, thus providing for ventilation, which the plaster jacket, with all its advantages, does not possess. Eyelets and lacing cords are now fitted in front, and the apparatus is complete. If desirable, the apparatus may be removed at night, the mattress then acting as the spinal support. To this apparatus Dr. Sayre's "jury-mast" may be added; this supports the head in an erect position, and the spine is relieved of superincumbent weight by a rod reaching above the back of the head, and from which supporting bands extend beneath both occiput and lower jaw.

This jacket is not expensive, and when the plaster jacket has been applied, a leather jacket can readily be fashioned from it. Its weight is almost nil comparatively. I have before me a jacket made for a boy fourteen years of age, and worn by him with great comfort for over six weeks, the weight of which is eighteen ounces. In this case fenestræ were cut in the jacket, to allow for the prominences of the anterior superior spinous processes of the ilium. In those cases in which extra support is required, narrow bands of steel may be placed on the back and sides of the jacket; these were used in the case above mentioned. The apparatus will stand a large amount of ill-usage and not be broken or bent out of position. The jacket can readily be removed by simply unlacing the front, thus providing for ablution etc.

ARTICLE V.

ON THE VALUE OF ERGOT IN THE TREATMENT OF PNEUMONIA.

By WILLIAM MEACHER, M.D., Portage, Wis.

About a year ago Dr. O. D. Colman, of Pardeeville, Wis., told me that he had used ergot in pneumonia with very gratifying

results. He said that about six months before that, it occurred to him to try ergot in pneumonia. He had then used it in five or six cases, and in every case it seemed to cut the disease short by checking the extravasation of blood, so that there was no consolidation, or hepatization. I was greatly impressed with the idea at the time, and urged Dr. Colman to publish an article on the subject, but he neglected to do so. Since then the subject has been mentioned in several of the medical journals. But I cannot forbear giving my own experience with ergot in inflammation of the lungs. I have treated five or six cases, and Dr. Colman tells me he has treated fifteen or twenty with it. A history of my last case will serve to illustrate my experience. I copy from my case-book:

Was called January 13, 1880, to see Charley S., aged fifteen years; found he had been attacked the day before with headache and chills; he had high fever, severe pain in right side of chest, and cough; pulse 120, temperature 103°; prescribed Squibb's fl. ext. of ergot, five drops every three hours, and Dover's powders to relieve pain.

January 14th.—Less pain to-day, but high fever; pulse 110, temperature 104°; a little rusty expectoration, which commenced last night; nearly the whole of the right lung seems to be inflamed; the respiratory murmur is *harsh* over most of the lung. Continued treatment.

January 15th.—Pulse 100, temperature 103°; less thirst and less pain to-day; rusty expectoration almost stopped; not much cough. Treatment the same.

January 16th.—To-day there was an attack of fever which seems to be of a malarial character. I found him with his pulse 110, temperature 104¾°. The lung no worse, apparently, and the rusty expectoration stopped. Prescribed quinia.

January 17th.—Fever came on again to-day at the same time as yesterday, showing it to be decidedly of a malarial character. Some mucopurulent expectoration; respiratory murmur heard all over the lung, with some coarse râles; pulse 100, temperature 103°. Continued quinia, but stopped the ergot.

January 18th.—To-day the temperature only reached 102°,

pulse 90; very little cough, or trouble of any kind with the lung.

January 19th.—Patient got up to-day, and I did not see him again.

Now, here was a case that at the outset had all the symptoms of a bad case of inflammation of the lungs, but it seemed to be cut short by the ergot. There was very little extravasation of blood, and convalescence was very rapid, notwithstanding the malarial complication. Had it not been for the ergot in this case, I am satisfied that there would have been a good deal of extravasation and consequent hepatization, which most likely would have been serious and very tedious. Rapid convalescence has been the rule in the cases which I have treated with this drug. This has also been Dr. Colman's experience. Of course if I did not see the patient until hepatization had taken place, I should not think it worth while, then, to administer ergot, because the mischief, it is so potent to prevent, would already be done, unless extravasation was apparently still going on in some part of the lungs.

Although we do not know much about the cause of pneumonia, we know very well what the pathological condition is, and we know that pneumonia (I am speaking of it as it commonly occurs and wish to be so understood throughout this article), is serious or not, generally, in proportion to the amount of extravasation and consolidation. In pneumonia *something* affects the capillary vessels so that the blood leaks through their walls; this is how the mischief is done. Now, from what we know of the physiological action of ergot, its action on the unstriped muscular fiber and consequently on the walls of the capillaries, it is just the agent we should look to for the purpose of preventing this leakage.

I have no doubt that ergot will prove to be a most powerful remedy in the treatment of inflammation of the lungs, and enable the physician to render his patients, with this disease, real benefit by assisting nature, instead of hindering and embarrassing her in her efforts, as has been done to such a fearful extent in the past, by such drugs as veratrum viride, and other depressing agents.

Clinical Reports.

NOTES FROM PRIVATE PRACTICE.

ARTICLE VI.

Anomalous Origin of the Descendens Noni.

In a recent dissection of the triangles of the neck, I met with an anomalous origin of the descendens noni, which may prove interesting to anatomists. In the ordinary text books the statement is made that the descendens noni is given off from the ninth or hypoglossal nerve, and joins just below the middle of the neck, to form a loop with the branches from the second and third cervical nerves, known as the communicans noni, lying upon the carotid sheath or occasionally within it. This being the rule, the case in question presents a wide variation from it. On opening the carotid sheath, I found a nerve corresponding to the descendens noni as above described, but on tracing it carefully upward found that it became intimately blended with the pneumogastric nerve, and could not be traced farther without separation of the fibers of the latter. It lay upon the internal jugular vein, crossing it obliquely, and piercing the carotid sheath in its lower third, to be distributed to the muscles of the anterior region of the neck, *i. e.*, the depressors of the os hyoides. The communicating branches from the second and third cervical, ordinarily known as the communicans noni, were absent.

As far as I have been able to investigate, there are no cases recorded, which are precisely similar to the above. Heule describes this nerve, as "nervus cervicalis descendens," which is composed of the "ramus descendens" from the hypoglossal, and branches from the second or a loop between the second and

third cervical nerves, which correspond to the communicans noni of Gray and others.

Höll has demonstrated that the branch which apparently proceeds from the hypoglossal, is composed of fibers ultimately derived from the first or second cervical nerves. In some of the old text-books, there is a statement that the ramus descendens, or portion from the hypoglossal really takes its origin in the "ganglioform plexus of the vagus," which corresponds to the "ganglion inferius," instead of the ninth. This variety, Heule states, is more correctly described, according to C. Krause, as the passage of the "ramus descendens" into the neurilemma of the vagus, whence comes the appearance as if it took its origin from the same, adding, however, the statement that cases may happen in which the ramus descendens from the ninth is entirely absent, and in which the branches to the depressors of the os hyoides are derived directly from the par vagum; quoting as authorities Pye Smith, Howse and Davies Colley. (Guy's Hospital Rep. III, Series XVI, 161). Luschka states that the descendens noni, usually contains no filaments from the hypoglossal, but is a branch from the first and second cervical nerves temporarily associated with the ninth. This would agree with the circumstance that in some animals those muscles which are supplied by the branches of the descendens noni in the human subject, receive their nervous supply from the cervical plexus.

In a case of Turner's (Journal of Anatomy VI, 102), the ramus descendens was derived from the vagus and afterward sent a portion of its fibers back again to the trunk of that nerve.

The case that I have above described adds another to the instances of anomalous origin which have been recorded, and appears to differ from them all in the fact of the absence of the communicans noni. The ultimate origin may have been the same as in those examples, in view of the communications which exist between the hypoglossal, vagus and superior cervical nerves, at the "plexus ganglioformis," which is merely a spreading out of the fibers of the vagus by the interposition of adipose connective tissue, this arrangement giving rise to a ganglioform enlargement commonly termed the "ganglion of the trunk," or "ganglion inferius" of the vagus.

It was impossible to dissect out of this structure with its filaments of communication with any degree of accuracy, on account of the large amount of adipose tissue surrounding the part, and the exceedingly poor state of preservation of the subject.

G. FRANK LYDSTON, M.D.

CHARITY HOSPITAL, NEW YORK.

ARTICLE VII.

Report of Case.

May 14th, 1879, called to see Mrs. H. in labor with her fifth child. Confinement was expected about April 15th, at which time slight pain was experienced. Labor commenced several hours before a medical attendant was summoned. Patient had had pain every night for a week. Pulse, 102; temperature, 99°. Pain infrequent and very weak and the patient very much exhausted.

On examination found a body two inches in diameter projecting an inch and a half from the vulva. The finger, passed behind and in front of the body, determined with difficulty that there was no passage beyond it, demonstrating that it was the cervix uteri. The projecting portion was purple, and the os scarcely visible. The finger, when passed, gave a sensation as though it were being forced through clots of blood, and could not reach the presenting part, which the previous attempt had determined to be the head. There was no appearance of cancerous or other disease.

On inquiry, found that the patient had first noticed something wrong during the first month of pregnancy, when she felt something come down between the labia while at stool, which she replaced herself. Since that time it always came down if she strained at stool. Had consulted a neighboring physician without relief.

Being unable to replace the womb, I scarified it and applied warm fomentations, and attempted by various means (without ergot) to increase the uterine contraction. Failing in this, I sent for assistance, and when the patient was thoroughly anæsthetized applied the forceps. The bleeding from the cervix had so far

relaxed the organ as to make this only moderately difficult. The child was delivered safely and easily, with apparently no injury to the mother except an expected laceration of the cervix, about one inch in length. The part was then returned within the body after the removal of the secundines.

May 15.—Patient doing well. Ordered that the vagina should be syringed out twice daily with dilute carbolic acid.

May 16.—Patient suffering much from pelvic pain. Tenderness of hypogastric region. Pulse, 120; temperature, 102°. Ordered opiate and continued injections.

From this time to June 16th the patient's general condition improved, though a tumor of considerable magnitude formed in the left iliac fossa. She then became impatient and put herself under the care of an "Indian Woman" before my next visit on the 23d. The "woman" spent the day in brewing two vile mixtures to be given in teacupful doses. One seemed to be intended to act on the uterus (which she supposed the tumor to be). The other produced violent catharsis.

On the evening of the 24th, at the urgent solicitation of a neighbor, I visited the patient again. Pulse almost undistinguishable; skin cold; fæces passed involuntarily every half hour. Tumor on steady pressure breaking up into smaller ones, and apparently partly formed by gas and fluids held back by the pressure on the intestine of the swelling in the iliac region.

Injected tr. opium in starch water, and gave brandy and ammonia liberally. The patient gradually gained strength, but was confined to the bed until late in August. The tumor was lanced above Poupart's ligament on July 10th, and opened of itself below that ligament, later in the month. The treatment is not given in full because the poverty of the family made food and the promotion of its assimilation the most essential medication.

Dec. 9th.—Patient consulted me as to a hernia formed in the site of the opening below Pouparte's ligament, but is otherwise in excellent health. At the last examination the cervix uteri was natural in size, but slightly deformed by the cicatrix of the laceration mentioned above. Menstruation normal.

WEST DE PERE, Wisconsin. DR. H. H. HURD.

Domestic Correspondence.

ARTICLE VIII.

NEW YORK LETTER.

Editors CHICAGO MEDICAL JOURNAL AND EXAMINER:

The winter courses at the medical colleges are coming to an end, and with them the most important of the clinics stop. Chief among these clinics is that conducted by Professor James R. Wood, M.D., LL.D., in the amphitheater at Bellevue Hospital. "Jimmy Wood's Saturday clinics," are as familiar to the students and the profession here as Flint's Practice. They form a historical feature, indeed, and deserve a little description. The amphitheater at Bellevue Hospital will hold over a thousand persons, and every Saturday at half-past one it is crowded to its full extent. The bill of fare has been advertised previously on the college bulletin-boards, and it always includes a capital operation, often two or three of them. At the appointed hour Prof. Wood walks in. He is a little man with a very erect gait, a ruddy complexion, gray hair and moustache, and keen dark eyes. He dresses with the greatest care; his broadcloth coat, lavender trowsers, white vest and tie, and a button-hole bouquet are inseparable from his appearance in the amphitheater. "Jimmy" Wood, as he is endearingly called, is not a brilliant lecturer. His flow of words is interspersed with aphasic stops, and his voice is not a powerful one, still he gives a good many useful hints to the students, and no one can leave a course without feeling deeply the importance of preserving the periosteum. But it is as an operator that the Professor shines, and justly so. There is no surgeon in the city who knows better what to do, or whose knife goes so unerringly to the right spot. He used to be one of the

"lightning operators," removing thighs, et cetera, in eleven seconds. He operates in this style now occasionally, just to show the "boys" how it is done. When Mr. Callender, the English surgeon, was here last winter, Dr. Wood invited him to amputate a thigh before the students at his clinic. Mr. Callender accepted the invitation, and removed the extremity neatly and well, but with some deliberation. It so happened that Prof. Wood had another thigh all ready for himself to amputate. The patient was wheeled in, and the American professor exclaiming, "Now, I'll show you how I do it," with two or three flourishes, had off the extremity—to the great admiration and applause of the class. It was an exhibition of "Jimmy" Wood's weakest point, his vanity, as well as his surgical skill. This vanity is quite insatiable, but is conceded by its possessor, and has its amusing side. "Jimmy" is very popular with the young men of the profession. These he is always willing to help; in fact there is no surgeon in the city who has aided so many. In return, he exacts of his protegés implicit deference to himself and a sufficient amount of complimentary attention to feed the undisguised vanity of his nature. Dr. Wood is very successful in his surgical operations. Shrewdness and good judgment, a skillful knife and a scrupulous attention to after-treatment will explain this. He does not use the Lister method. His amputations are all treated with open dressings; and he has had such uniform and remarkable success that it would be absurd indeed to make a change. I cannot give the exact statistics, but I am told that he has had only one death from amputations in four or five years. He operates twenty or thirty times during the year. It should be remembered, too, that some of his cases have been treated in wards that used to be rank with puerperal fever.

The question of the dressing of wounds brings up that of Listerism. And it is a somewhat curious fact that while in London Lister is just receiving his greatest triumphs, in New York the method of Lister, pure and simple, is certainly dying out. At the recent discussion on Listerism, in London, only Bryant, Savory and Holmes opposed Lister and his spray. In this city the method is used in New York and Roosevelt Hospitals only by one surgeon. It is but little used in Bellevue, Presbyterian,

St. Luke's and St. Francis, Hospitals. At the Woman's Hospital, it is used as a rule in ovariotomy, but not always. Antiseptic surgery, that is to say, thorough cleansing and drainage are advocated, but Listerism, with its accompanying spray, is not considered essential nor always useful.

At the New York Hospital, a somewhat new and apparently very admirable method of treating compound fractures, has been introduced by Dr. Markoe. Putting them up in Lister was tried for some time, and it was thought at first to be attended with excellent results. But a wider experience shows the contrary. A compound fracture put up in Lister, has to be dressed perhaps a dozen times during the first week. Every time the dressing is renewed, the leg has to be disturbed, the fragments are moved and the parts irritated. The consequences are not good. The new method now adopted is to make a counter-opening to the wound in the injured limb, and to pass a large drainage-tube through this opening. The limb is then put up in a plaster of Paris dressing in which fenestræ are cut. Carbolized water is then injected through the drainage-tube every two hours during the first day, and three times a day after this. Care has to be taken not to run the tube next an artery, as hæmorrhage may follow. With this dressing there is a very moderate fever, the thermometer does not often rise above 102° or 103°, and in some cases it does not reach 100°. Nearly two hundred cases have been tried by this method and, it is stated, there has been only one death, that being in a very bad case. The treatment has diminished the number of amputations performed at the hospital. It certainly is a very rational one and deserves further trial.

A case at Bellevue Hospital in which rhinoplasty was performed, has lately excited much interest among the profession and the public. A young man had lost his nose from a lupoid affection. The progress of the disease had ceased, but the contractions of the scar had produced ectropion of both lids. This was relieved by plastic operations. An attempt was then made to restore the nose, the middle finger of the left hand being used as the agent. The matrix of the nail was first destroyed by caustic as a preliminary measure; an incision was then made along the median

line of the palmar surface of the finger, flaps were dissected back and their edges stitched to the denuded sides of the nasal orifice. During the operation so much blood got into the larynx that tracheotomy had to be performed. After the operation, the finger was held in place by several straps of strong adhesive plaster. It is intended, after the adhesion has taken place, to ligate the digital arteries one after another. The finger will then be amputated, and the new nose perhaps further trimmed into good proportions. At last accounts the finger had united well in all parts except at the top. The deficiency here can be easily remedied. It is not to be expected that the boy will have an organ of Grecian beauty, but all who have ever seen the noses constructed from flaps alone will appreciate the advantage of having something solid and substantial, like a finger, upon which to work.

There is another similar case of nasal difficulty in the hospital, and if the present operations are successful, they will be repeated on the second patient. This particular rhino-plastic operation has been done once before in England, but never with the completeness of detail or in so bad a case as the present one. Dr. Sabine, the surgeon will gain much credit for originality and skill, if he succeeds.

A plastic operation has recently been performed at the New York Eye and Ear Infirmary which is quite novel and interesting. A boy about twelve years old had had his face greatly disfigured by a scar. One of his eyelids was almost entirely gone, the row of lashes being drawn up until nearly where the eyebrows had been before they were burnt off. Dr. Norris, the visiting surgeon, performed the following operation. He dissected off the skin from a large semilunar space just above the eyelashes of the injured side. He then dissected up a piece of skin from the side of the chest. It was semilunar in shape and about three inches long by two in width. This was dissected entirely off and laid carefully upon the denuded surface where the eyelid should be. It was held in place and the eye kept shut by layers of collodion painted over it. The whole piece united to the surface below it, all except the center, doing so by first intention. I saw the boy a couple of months after the operation. The large flap had then contracted down so that it was not more than an inch long by half an inch

in width. The boy had an excellent eyelid, with very little disfigurement. The operation was certainly a great boon to the boy and is extremely creditable to the surgeon.

I was told by the house-surgeon, Dr. Oppenheimer, that benzoic acid which has recently been recommended so highly in eye diseases, deserves much of the credit which it is getting. It is particularly serviceable in corneal affections.

We have been having times of peace and love at the New York Academy of Medicine. A little while ago Mrs. Wm. Astor presented to the Academy, through its president, Fordyce Barker, a beautiful silver cup, to be used on great occasions and called "The Loving Cup." Its presentation was accompanied by a number of speeches. It cannot be said they were very eloquent or of high literary merit, but they gave expression to cordial feelings, and showed an appreciation of the fact that the medical profession is beginning to be estimated at a juster value by the intelligent among the laity. It is a fact, in cities at least, that doctors are both praised and blamed much more than they should be. The profession deserves a different judgment from that given it a generation ago. There are more men in it now of the best education, of fine scientific attainments and general culture. In spite of charlatanry outside and jealousy within, the character and standing of the average physician is higher. It is gratifying, therefore, to see evidences that this fact is getting to be understood.

A great deal has been said and written and done here, about lunacy reform. The medical profession is not, as a whole, very deeply aroused on the subject, although the *Medical Record* has been hammering away for a long time, and the New York Neurological Society has taken the matter up with great vigor. An unsuccessful petition, praying for investigation, was gotten up last year by this society. The senate committee, before whom some of its members appeared and testified, made a report very unfavorable toward taking steps to reform. To this report the Neurological Society have issued a reply in which they show very clearly, and with some vituperative emphasis, that they were unjustly treated and misrepresented in every way. They also sustain most of the charges they made. A bill is now before the

assembly providing for three additional members of the State board of charities, who shall act as commissioners in lunacy. The bill is moderate and sensible; it simply creates a commission raised above political and personal influences, to supervise the management of insane asylums.

As regards the merits of the question, there can be no doubt that we are sadly in need of some change. We have 2,700 lunatics for instance, crowded into two asylums on the Islands in East River. These are under the superintendence of one medical man, with an insufficient corps of assistants, and with no opportunities whatever for carrying out proper treatment for the patients. It is simply one vast boarding-house. There are similar deficiencies in the way of medical attendence, crowded accommodations, etc., in other asylums of the State and the rapid yearly increase of the insane makes the future look unpromising. The great trouble, however, lies in the fact that no radical improvements can be made without incurring much expense, and many think that we are doing well enough now, and that the system will gradually improve if left alone. This is very doubtful and the propriety of having an efficient lunacy board to point out the deficiencies and gradually introduce a better system of care and treatment can hardly be questioned.

The subject of the abuses of medical charity is likely to be agitated here again, this time with a view to introducing the provident-dispensary system as a measure of relief. New York suffers greatly from the crowds of paupers, or would-be paupers, that fasten upon it, and try to live off its charity. No class of persons suffers more perhaps than physicians, whom a great many people are accustomed to think educated and established in order to furnish gratuitous medical relief. The story may have reached you of one of this class, who called in a carriage at a dispensary, and complained at having to wait for treatment, because she was *paying for the carriage by the hour.*

Provident-dispensaries are simply mutual health associations, whose members earn a weekly salary not exceeding ten dollars. They pay a weekly sum of four or five cents into a general fund, and are then supplied when sick, with medical attendance and nursing. Such institutions have been working for some time in

many parts of England, and when they do not have to compete with free dispensaries that furnish clinical material for the medical colleges, they easily become self-supporting and successful. The medical men attending them get paid respectable sums, varying from $300 to $1000 per year. There are of course dangers and difficulties attending them, but there is no reason why they should not be successful and useful in most cases.

Our State is likely to have, at last, a State board of health. This we have needed for a long time. The difficulty of harmonizing State and municipal authority, however, was felt to be great and has prevented any strong efforts from being made. In addition to this there have been very efficient health boards in our larger cities, so that the need of a State organization has not been so much felt. The present bill, however, has been drawn up under the supervision of the New York City Health Board and receives its approval. It makes the usual provisions for sanitary care, the collection of statistics and investigation of scientific subjects. It does not undertake to regulate medical practice or to deal with the quacks, as the Illinois board does. Although this would be desirable eventually, it would be too much for a new organization.

The profession in this city are beginning to prepare (by subscription) for the annual meeting of the American Medical Association in June. Everything is being arranged for the expedition of business and the comfort and enjoyment of the guests. It is likely that the meeting will be a great success and a very enjoyable occasion.

New York has just closed one of its gayest seasons. This may appear to be a fact hardly worth recording in a medical journal, but it suggests a topic, the doctor in society, which might be made interesting. I don't know how it is in other large cities, but here the doctor is a very lively and ubiquitous element in every kind of social gathering. We have a large number of promising young men with "a small but growing practice" who have leisure on their hands, which they use for the delectation of the ladies. There isn't a club or reception, a sociable, a dinner, a dancing party, or a German, that hasn't its medical representative. This medical man-of-the-world pervades every variety of

social gathering and ornaments all strata of society. He may be seen at the unassuming hops in a second-rate boarding-house, as well as at the dinner-tables of the wealthy and fashionable. And this is no exaggeration. There are some who are almost professional society men and "lady-killers." The majority, however, are of those who work hard enough during most of the time and like, once in a while, to look into the palpebral fissures of beauty in search of other things than morbid changes. Some are doubtless seeking, by what is called the "society dodge," to make themselves known. But it is a very uncertain method of gaining professional reputation, to be an expert waltzer. And whatever the motive or result, it is a fact that the young doctor is a brightly conspicuous figure in New York society. Some one has said that "the feeling which woman has for her physician is second only to that which she has for her lover;" and perhaps there is enough of truth in the saying to give the young medical man something of an advantage.

ARTICLE IX.

SMALL-POX.—A SUGGESTION.

ROCKFORD, ILLINOIS, Feb. 12th, 1880.—MESSRS. EDITORS: I notice by the Chicago papers there are some cases of small-pox in the city. Just after the war I had charge of a small-pox hospital at Prairie du Chien, Wisconsin. I succeeded in many instances in preventing the pustules from filling, and aborting the disease, so that the patients did not show any marks or pits a few weeks after recovery. In one instance, a young lady, who would have had confluent small-pox, has not a mark or pit visible to-day upon the face. The remedy is cream of tartar and water; give a sufficient quantity to operate as laxative and diuretic, and continue the treatment as it becomes necessary. The local application, of course, should not be omitted. I should think vaseline or carbolated cosmoline would be a fine external application. This treatment for small-pox may not be new to you, but I am satisfied it is not in general use, and for that reason have mentioned it to you. I shall remain here several weeks, and will be pleased to hear from you. With kind regards, I remain very truly yours, JOHN CONANT.

Reviews and Book Notices.

ARTICLE X.—A TREATISE ON THE THEORY AND PRACTICE OF MEDICINE. By JOHN SYER BRISTOWE, M.D., London. Fellow and formerly Censor of the Royal College of Physicians; Senior Physician to and Joint Lecturer in Medicine at St. Thomas' Hospital; Examiner on Medicine to the Royal College of Surgeons; formerly Examiner in Medicine to the University of London; and Lecturer on General Pathology and on Physiology at St. Thomas' Hospital. Second American Edition revised by the Author. With Notes and Additions by JAMES W. HUTCHINSON, M.D., one of the Attending Physicians to the Pennsylvania Hospital; Physician to the Children's Hospital, Philadelphia. Philadelphia: Henry C. Lea, 1879.

This is a full-sized octavo volume of 1,081 neatly printed pages, with good leather binding. It is a general work on the theory and practice of medicine, written expressly for a text-book for the use of students. As this is the second American edition, it would be pleasant to join most of our cotemporaries in simply saying that the work is already too well and favorably known to the profession to require an extended notice at our hands. But having recently, in a brief notice, found some fault with the new volume on Clinical Medicine, by Dr. A. Flint, we could not consistently pass the present work with a mere general commendatory remark.

The work before us is divided into two parts. Part I, General Pathology, occupies the first one hundred pages of reading matter, and includes a brief discussion of the Definition of Disease; the Etiology of Disease; Physiological Processes in Health; Physiological Process in Disease, and the Treatment of Disease.

In regard to the first topic here mentioned, the author, after three pages of comments and illustrations, states his definition of disease as follows:

"And hence, if these views be generally true, disease may be defined *as a complex of some deleterious agency acting on the body, and of the phenomena (actual or potential) due to the operation of that agency.*" (Page 36.)

The italics are the author's, and the words thus emphasized clearly show that he includes in his idea, as expressed by the word *disease*, three distinct things, namely, the cause or causes; the morbid conditions or disease proper; and the phenomena or symptoms by which the latter is manifested. When the writers of two or three generations past, defined disease by enumerating a group of symptoms, and designated the morbid or pathological condition as the *proximate* cause; and the causes or agencies inducing such morbid condition or proximate cause, as predisposing and exciting causes, they preserved, at least, a logical clearness of statement. They misplaced the word disease, by using it to designate the symptoms or phenomena of morbid conditions, instead of the conditions themselves; but they avoided confounding together things or ideas essentially distinct. Our present author, however, insists on making confusion worse confounded in the mind of the student, by including in the meaning of one word, disease, causes, morbid conditions, and consequences or symptoms. That I do the author no injustice here, I will quote his own illustration directly following his definition of disease as already given, from page thirty-six.

He says: "All diseases involve, some in a greater, some in a lesser degree, certain groups of pathological consequences immediately traceable to their respective morbid causes; but these primary pathological consequences themselves tend to evoke others, these again a tertiary series, and so on continuously.

"Thus a person with carcinoma of the bowel may, as a consequence, have stricture, or perforation, or involvement of the glands occupying the retro-peritoneal tissue and gastro-hepatic omentum, or that form of cachexia which cancerous disease so frequently induces; and, as a consequence of these several secondary morbid conditions, various other affections, such as enter-

itis, peritonitis, jaundice, ascites, melæna, thrombosis or anasarca. Now all these phenomena, and many others, are obviously integral portions of the carcinomatous affection which the patient is suffering, and all of them may be regarded as symptoms or incidents of that affection; but many of them are not unfrequently also looked upon as quasi-independent disease, and treated as such. There is no doubt that they are *not* diseases. They are clearly however, elements of disease; and inasmuch as each one of them arises out of some immediately antecedent abnormal condition which is its direct cause, they do obviously enough, in association with their respective causes, fall severally within our definition of disease."

Here the author apparently for the sole purpose of making it appear that a definition of disease should embrace, not only the disease proper, but also its causes and consequences, allows himself to call such distinct morbid conditions as stricture and perforation of the intestine, enteritis, peritonitis, etc., mere "phenomena," "symptoms or incidents" of a prior disease; "*integral* portions of the carcinomatous affection;" and to declare "that they are not diseases," but "elements of disease." If any one can explain how a morbid condition like peritonitis, for example, can be at one and the same time, an "element" or "integral portion" of a prior carcinoma of the bowel, and a "phenomenon," "symptom or incident" of such disease, he will certainly exhibit a rare degree of skill in reconciling incongruities in the use of language. Is a peritonitis, enteritis, or stricture any the less a disease, because it exists as a complication of carcinoma of the bowel, which may have acted either as a predisposing or exciting cause?

Certainly not. The author carries the same confusion of ideas, or inaccuracies of expression into his general comments on etiology. Instead of dividing the causes of disease into simple predisposing and exciting, he follows the example of earlier writers and divides them into predisposing, exciting, and proximate; and gives the usual definition of each class, declaring the *third* class to comprise "those morbid processes which the action of the exciting cause calls into play, and to which the symptoms are supposed to be directly due."

Yet he immediately adds: "The proximate cause indeed, is often, though *erroneously* said to be the disease itself." But why erroneously? If, as he has just asserted, the *proximate* cause comprises "those morbid processes," or deviations from the healthy standard of action, "which the action of the *exciting* causes calls into play," what is it but the disease itself?

If the morbid processes or changes set up in a living structure or organ by action of some exciting cause, do not constitute a disease, pray what does? Our author, however, proceeds to illustrate as follows (See p. 37):

"A woman, who has frequently been exposed to the contagion of scarlet fever without taking the disease, is again exposed at the period of child-birth, and now suffers from a virulent attack. Here, peritonitis, which renders woman peculiarly susceptible of the contagious fevers, is the *predisposing* cause; the scarlatinal contagion is the *exciting* cause; and the inflammatory processes going on in the skin, tonsils, and elsewhere, the *proximate* causes of most of the symptoms which the patient manifests."

So far all is clear, "But," he immediately adds, "the *exciting* cause of the scarlet fever is obviously the *proximate* cause of that disease, and the *proximate* causes of its several secondary phenomena are just as obviously their *exciting* causes." He had just stated that the exciting cause was the scarlatinal contagion or poison, and that the inflammatory processes going on in the skin, tonsils, etc, were the proximate cause. Now he declares the exciting cause of the fever to be the proximate cause. In other words, the cause of the disease is the disease itself. The student who is expected to acquire logical modes of thought, and clear conceptions of the relations between causes and effects, from the study of the first part of Dr. Bristowe's work is not to be envied.

The great body of the work is occupied by Part II., Special Pathology, or the consideration of individual diseases.

These are arranged under eight heads or chapters as follows: 1. Specific Febrile Diseases; 2. Diseases of the Skin; 3. Diseases of the Respiratory Organs; 4. Diseases of the Vascular Organs; 5. Diseases of the Digestive Organs; 6. Diseases of

the Genito-Urinary Organs; 7. Diseases of the Organs of Locomotion; 8. Diseases of the Nervous System.

The details of this part of the work are full and comprehensive, so far as the number of subjects treated, is concerned. And though we should be obliged to differ with the author in regard to some etiological and pathological doctrines, yet as a general rule his account of the symptoms, progress, and diagnosis of diseases is concise, clearly stated, and satisfactory.

Sometimes, however, his descriptions are lacking in accuracy, and he not unfrequently uses words of specifically different meaning as promiscuously as though they were synonyms. But the least satisfactory part of the whole work, so far, at least, as it is used by students and inexperienced practitioners, is that relating to the treatment of individual diseases. In most cases his views concerning the remedial treatment of diseases, are expressed in the most brief and general terms, with no adequate adjustment of the remedies to the different stages in the progress of the morbid processes, nor any allusion to the variation of doses required to accomplish given results, in different morbid conditions. Take as example, variola or small pox. After occupying seven closely printed pages in describing the causes, symptoms, progress, diagnosis, etc., his entire account of the internal treatment of the disease is embraced in the following quotation, occupying about one-third of page 174:

"*Treatment.*—In the mildest forms of small-pox medicinal treatment is scarcely called for; in the severest it is useless; and indeed, under any circumstances, it has but little influence over the course of the disease. The patient should be placed in an airy chamber, which should be well ventilated, and kept at a uniform and medium temperature. He may take as medicine some cooling drink—lemonade, soda-water or other saline or acidulated solution. If the bowels be confined, they may be acted upon by some mild laxative; if there be diarrhœa (especially in adults), they must be restrained by opiates, or other astringents. The soreness of the throat may be relieved by warm bland drinks, or black-currant jelly; and, if there be much discharge from the nose and about the fauces, these parts may be washed with some mild detergent or astringent solution.

Opium is often of value both in relieving the delirium and assuaging the pain of the invasion period; but it is especially useful during the period of secondary fever. If there be great tendency to collapse, ammonia may be serviceable. Nourishment should be regularly administered, and should consist of the materials generally suitable for febrile conditions, namely, milk, rice-water, gruel, beef-tea and such like. Alcoholic stimulants must be given according to circumstances; but are *especially important* in the malignant form of the disease, and in the later periods of confluent, small-pox, or whenever there is tendency to collapse."

Here, we are told in the first paragraph, that all medicinal treatment is either unnecessary or useless; and in the last, that certain remedies are "especially important," in the very same class of cases that they are declared to be "useless" in the first. We are told that, "if there be great tendency to collapse, ammonia may be serviceable," but which of the half dozen preparations of ammonia is to be used, or in what doses, the student is left to guess. The entire treatment of yellow fever occupies about one-third of a page; that of enteric or typhoid fever less than two pages; and that of pneumonia nearly one page. In regard to this last-mentioned disease, the author makes no allusion to the very important modifying influences of coincident typhoid and malarial agencies, either upon the progress or treatment of the disease: yet every practitioner of experience, in this country, can testify to the very great importance of giving due heed to the influence of these agencies in the remedial management of this grave and frequently-occurring disease.

It is not necessary to extend the comments upon this work further, or to particularize further defects. It is sufficient to add that it is not such a text-book on the theory and practice of medicine as is most desirable for the use of students and young practitioners. N. S. D.

Editorial.

MEDICAL CHARITIES.

The abuse of medical charities has been the subject of discussion in nearly all the larger cities, both in this country and in England. Recently it has been attracting more attention than usual in this city, and is at present the subject of frequent discussion, especially among the younger members of the profession. The general social problem of how best to aid the really needy without encouraging idleness, pauperism and vice, is one of great importance and its practical solution involved in many difficulties. The medical aspect of the problem, or that which relates to the professional care of the sick poor, is the one that more immediately interests our readers, and indeed the profession generally. That the establishment of free hospitals, dispensaries, infirmaries, institutes, college clinics, etc., and liberally supplying them with medical and surgical attendants and medicines, tends strongly to increase the number of applicants for medical charity, and in the same proportion to increase the burden of taxation, on the one hand, and on the other to rob the members of the medical profession of the patronage of a large number of patients who are really able to pay moderate fees for all the attendance they need, has been so fully demonstrated in all the larger cities of our country as to need no further discussion.

When more than one out of every twenty of the entire population of a city like Chicago, is found to be receiving gratuitous medical services in connection with the various free dispensaries, it needs no further argument to show that a great wrong is being inflicted, both on the taxpayers and the members of the medical profession, while the undeserving recipients of the charity are

themselves injured in the impairment of their feeling of self-reliance, independence and motives to industry. Many in the profession are disposed to attribute all the evils and abuses to which we allude to the lax and careless manner in which the public medical charities are administered, and especially to the ambition of those connected with these charities and with the medical colleges, to draw to them as large numbers as possible, simply to increase the supply of clinical material and to advance personal interests.

There is certainly some degree of truth in this view; but the whole evil, or even the larger part of it, does not originate from this source. We have been interested observers of the working of both public and private charities for more than forty years; and have never known a place opened for the dispensation of relief to the poor, whether sick or well, that was not besieged by many who were fully able to take care of themselves, or to pay for whatever services they needed.

In the dispensation of ordinary supplies of food and clothing much imposition can be guarded against, by a system of actual visiting and inspection before the applications are answered. But this system cannot be properly and successfully applied, except in a very limited number of cases to applicants for medical advice or medicines.

Is there, then, no way by which the really poor, when sick, can receive prompt and proper attendance and medicines, without opening a door of charity through which thousands will pass who could and should pay for all they need? Is there no way to secure help for the needy and at the same time avoid robbing the profession, the benevolent, and the tax-paying public? So far as attention to the sick is concerned, we think there is. The code of ethics, governing the medical profession, not only permits but enjoins a liberal and faithful attention to the poor when sick, on the part of every member of that profession. And there are in every place, at least in every populous town, physicians enough to supply any sick person in it with all the attention they need. Among them are always a fair proportion of the younger class, well educated, competent, and anxious to accept any call to the sick that will help to fill up their leisure time, add to their practical experience, and further their professional introduction

to the community. For this class of practitioners the sick poor are the natural stepping-stones over which they must pass to the paying part of practice. Faithful and skillful attention to the sick poor in their own homes, on the part of young physicians, constitutes the best possible letter of introduction to the rich. But it is not the younger class of physicians only, who promptly and cheerfully render gratuitous service to the sick poor.

During a long professional life we have very rarely known a physician or surgeon of ripe age, full practice and high reputation, to refuse attendance upon the most abject poor when asked, merely because they were poor. Such are compelled sometimes to refuse attendance because previous engagements do not allow a moment of time in which to do it. But even in all such cases they are ready to direct the sufferer to some less occupied professional friend who will attend. Indeed, if every dispensary staff and other organization for furnishing free attention to the sick poor outside of the regular hospitals, were dismissed from duty to-morrow, we do not think there is, or would be, a truly needy sick person in the city who could not get all necessary professional attention by simply asking for it. If these opinions are correct (and of their correctness we have no shadow of doubt), what provisions are actually necessary for the sick poor, and how shall such provision be guarded from abuse?

After devoting much attention to this subject, we are convinced that all establishments, whether called dispensaries, infirmaries, or clinics, where the sick are invited to call for medical advice and attendance, are unnecessary and more or less injurious, both to the profession and the community.

Good public hospitals, to accommodate those who have no homes or places where they can be well cared for when sick, whether poor or not, are necessary. And of these we have a good supply in this city. The only provision needed, outside of such hospitals, is for the proper public authorities (here the county commissioners) to establish from one to three drug depots in each division of the city, supply them with a good assortment of pure drugs, and with a good *dispensing drug clerk* (and assistants if he needs them), to dispense the drugs whenever called for, by the presentation of proper prescriptions. But no

prescriptions should be accepted or filled at any of these places unless made by physicians legally authorized to practice medicine in this State, and having plainly written on them that they are given for patients to whom the maker of the prescription gives his own services gratuitously. This would place a supply of reliably dispensed medicines within the reach of all patients, who were sufficiently destitute to satisfy the physician that his own services should be rendered without pay, and at the same time place all those legally authorized to practice medicine on the same footing in relation to the sick poor. The drugs being purchased at wholesale prices, and the depots simple, convenient, inexpensive rooms for dispensing the medicines, the expense of maintaining them would be light, and being accessible for the prescriptions of all physicians on the same terms, there would be no trouble in finding free medical service for every really poor patient asking it. And yet all who could pay even moderate fees for the services of a physician would be compelled to do so, instead of crowding the rooms of dispensaries where each establishment is more anxious to make a large show of attendance, than to make proper discrimination between the deserving and undeserving. Perhaps some one is ready to say that such a system as we have proposed, would deprive the medical schools of a very important part of their material for the clinical instruction of their students. It would be a sufficient answer to such an one, to say that no medical school has any legitimate right to exist, unless so connected with a public hospital, that the necessary clinical instruction can be given within its walls. But the plan we propose would not necessarily prevent the medical colleges from having all the outside clinical material that their faculties could profitably use. Probably not one-third of all those now resorting to the several dispensaries in this city are used for any valuable clinical purpose. And most certainly, the faculty of any college located in the midst of a large city, the members of which were possesed of sufficient ability and reputation to justify them in holding such official position, could draw from the poor within the circle of their own practice and that of their intimate professional friends, all the well selected clinical material they could profitably use, outside of that belonging in the hospitals.

We know the foregoing doctrines in regard to taking care of the sick poor, are not in accord with the fashion of these times. We live in a generation that has very nearly reversed the old rule, "When thou doest thine alms let not thy left hand know what thy right hand doeth." The popular method now is to do everything by organizations admitting of official positions, public meetings, and newspaper heraldings.

It is so much easier to give five, ten, or one hundred dollars, once a year and have it duly acknowledged in the church and the newspapers, and let a salaried officer do the distributing, than it is to personally search for the poor and discriminatingly supply their real wants, and add that friendly counsel which is often more needed than anything else. It is not strange, that in medical matters, the same popular tendencies should have so far predominated, that instead of allowing every practitioner to attend to the sick poor properly within his own circle of practice where he would be led to exercise a just discretion founded on personal knowledge of the parties for whom he acts, the funds should be centered in an organized dispensary fully officered, supplied with a formidable staff both for in-door and out-door attendance, and then if the trumpet is not literally sounded, the *hand-bills* are sent out, with a "Ho! all ye that are ailing, come to the dispensary and get healed without money and without price." Is it any wonder that thousands answer the call who are fully able to take care of themselves, and that in consequence, tax-payers are over-burdened, the mass of the profession robbed of the patronage that belongs to its members, and a premium put on idleness and pauperism? We are glad that the medical aspect of this great social problem is beginning to attract the attention that it deserves. D.

PROVIDENT DISPENSARIES.—The Medical Institute of Liverpool refuses to give its countenance to provident dispensaries, because they are business institutions and liable to abuses.

Selections.

HOSPITAL PRACTICE.

St. Georges's Hospital.—Case of Hypospadias. (*Under the care of Mr. T. Pickering Pick.*)

Plastic surgery, or "restorative surgery" as it is sometimes called, is always a subject of great interest, and one which merits the careful consideration of every practical surgeon. Operations performed for the cure of deformities, the relief of a hare-lip, the restoration of a nose, the closure of a fistulous opening, and such like, form a class in themselves, and require special attention and care on the part of the operator, if he would bring his case to a successful issue. At the same time there are perhaps no cases which are so satisfactory when successful, and which bring greater credit to the surgeon. Deformities are always of a distressing nature to the patient, and entail a great amount of suffering, either bodily or mental, and any operations which can be performed for their relief are sought eagerly after and gladly welcomed. The following case of hypospadias is recorded as affording a good example of what may be achieved in a form of malformation not unfrequently met with, and which, though it does not entail much bodily suffering, is the cause of very considerable mental distress to the patient.

Henry B——, aged thirteen, was admitted on Jan. 19th, 1875, suffering from hypospadias. The penis at first sight appeared to be quite rudimentary, consisting merely of the glans, which, however, was well developed and was covered on its dorsal surface by a considerable semilunar fold of skin and cellular tissue, which formed a sort of hood to it. This was the prepuce, malformed by being cleft on its under surface, heaped up on the dorsal aspect

of the glans into a semilunar fold, and attached by its extremities to the scrotum on either side of the rudimentary penis. Upon examining more closely, it was found that the body of the penis was bound down to the scrotum by a broad fold or web of skin. When erection took place it was arched, with the convexity upwards. The orifice of the urethra was in the scrotum, at the anterior extremity of the median raphé, and was situated at the bottom of a sort of fossa or cul-de-sac in this situation. Just above it was the glans penis, overhanging the orifice, and in the center of the glans was a slight depression in the normal position of the meatus urinarius. The boy was a fine-grown, healthy, intelligent lad, and presented no other malformation.

The first operation (Feb. 10th) consisted in making a traverse incision through the whole thickness of the semilunar prepuce just in front of its attachment to the corona glandis, so that it was only attached to the sides of the scrotum and penis by its two extremities. The mucous membrane at the margins of the incision was then stitched to the corresponding skin on either side, and the glans penis was protruded through the button-hole opening which was thus made. By this proceeding the malformed prepuce was brought down beneath the glans penis, and formed a sort of bridge stretching across from one side of the organ to the other, while the glans protruded through the opening thus made. The wound took some time to heal, but eventually did so, and a passage then existed between the inverted prepuce or bridge of skin and the under surface of the glans penis, which was intended to form part of the urethra.

The second step of the operation (May 12th) was undertaken to liberate the body of the penis from the scrotum. This was done by dividing the web of skin which connected the two together, and thus gradually raising the penis. The result of this was a large diamond-shaped raw surface where the one organ had been separated from the other. The edges of this surface were drawn together by hare-lip pins, so as to convert it into a longitudinal wound. In performing this operation care was taken not to interfere with the points of attachment of the bridge of skin formed by the inverted prepuce, by making the incision a little posterior to it, for fear that its vitality might be destroyed,

After the wound had healed, it was found that there was a fairly formed penis, about an inch in length. At the anterior extremity of this was the glans, with the inverted prepuce on its under surface. On the anterior surface of the scrotum, some distance below the point of attachment of the skin of the scrotum to that of the penis, was the opening of urethra. The space between these two points—that is to say, the glans penis and the opening in the scrotum—was occupied by the cicatricial tissue which was the result of the previous operation, and was intended to form the roof of the new urethra.

The third step (June the 26th) consisted in bringing over two oblong flaps to form the floor of the urethra, by a somewhat similar operation to that which is described and advocated by Mr. Holmes for extroversion of the bladder.* On the left side an oblong flap, with its base towards the middle line, was dissected up from the tissues on the sides of the scrotum and penis, so that its attached border was some little distance to the left of the middle line just external to the cicatricial tissue before mentioned. This flap was turned over, like the leaf of a book, so that the skin surface was directed towards the opening in the scrotum, and was intended to form the floor of the urethra, and the raw surface turned outwards. On the right side an oblong flap was fashioned, one side of the flap skirting the right border of the cul-de-sac or fossa in which the urethra was situated, and being carried upwards and to the right side of the penis; a second incision was made parallel to this, and about an inch external to it, and the two joined by a cross incision at the lower extremities, so that the attached border was directed upwards and outwards. This flap, having been dissected upwards, was applied to the raw surface of the left flap by gently sliding it round, in the manner described in the operation for extroverted bladder, and the two flaps were united together by several points of silver suture. The wounds caused by the transplantation of the flaps were also closed by suture. Union took place very readily, and we had now a second bridge of skin which covered over the linear cicatrix in the middle line, which had been formed as the result of the operation for

* Surgical Diseases of Children, page 149.

separating the penis from the scrotum. This bridge extended from the opening of the urethra below, almost to the glans penis above. The next step (July 10th) consisted in attaching the lower margin of this bridge to the skin of the scrotum below the opening of the urethra. This was done by rawing the lower border of the flap and implanting it into a transverse groove which was made in the front of the scrotum, just below the fossa, by slightly dissecting up the skin, so that the flap was dovetailed, as it were, into the skin of the scrotum, and fixed there by silver sutures, and thus the opening into the cul-de-sac from below was closed.

This operation was not entirely successful, a small fistulous opening being left at one point, but this was subsequently closed July 24th, and the urine now flowed over the flap or bridge, and was discharged above its upper margin. The final step in the proceeding consisted in attaching the upper border of this bridge to the lower border of the inverted prepuce. This was done by rawing the two margins, and sewing them together with several points of silver suture. During the attempt to close this opening the water was drawn off, and the patient was not allowed to pass any of himself, because it was feared that some of the urine might find its way between the edges of the wound and interfere with union. The result, however, was most satisfactory; complete union took place, throughout the entire length of the wound. The series of operations were now completed, and a sort of canal had been formed which extended from the opening of the urethra in the front of the scrotum to the base of the glans penis, which it was hoped would be sufficiently perfect to enable the patient to perform the act of copulation with the result of ejecting the semen into the vaginia, a proceeding which would clearly have been impossible previous to the performance of the operation.

Four years have now elapsed since the case was completed, and the following is the condition of parts: The boy is just eighteen, but does not look more than sixteen. The penis is small, but otherwise well developed. On the under surface of the organ is a canal, which has been formed as above described, which extends, from the corona glandis to the original orifice of the urethra in the scrotum.

This canal is rather large, so much so, in fact, that it would be possible, with a certain amount of stretching, to introduce the little finger. It is about an inch and a half in length, and by dilating its orifice one can see at the bottom the opening of the urethra on the anterior wall of the scrotum. There can be little doubt from the condition of the parts that all the natural functions could be satisfactorily performed.

West London Hospital.—Urethral Calculus Impacted behind a Tight Traumatic Stricture; Continuous Dilatation; Spontaneous Expulsion of the Stone; Patient attacked with Pleurisy when about to return home Cured; Death. (*Under the care of Mr. Teevan.*)

George O——, a laborer, forty years old, was admitted into the hospital on Jan. 7th, 1879, having been put under Mr. Teevan's care by Dr. Hurdwood, of Leatherhead. From notes taken by Dr. Warrilow, the house-surgeon, it appeared that the man was formerly a soldier, and had suffered from fever in India and from ague in the Mauritius. In 1865, whilst engaged with some soldiers at St. Helena in hoisting a gun from a boat into a ship, the gear broke. Several of the men were killed, and the patient fell astride the gunwale of the boat. Blood escaped from the penis, and a swelling formed in the perineum. He was taken into the military hospital, where an incision was made into his perineum, much blood and urine flowing out. For three years he had been troubled with difficulty in making water, for which he sought advice, and had the stricture dilated to No. 12 E. On several occasions he had rigors, and suffered from pain in the loins. Two weeks ago no instrument could be passed.

When admitted to the hospital he was thin and sallow, had difficulty in micturition, and his urine contained some muco-pus. The scrotum and perineum were scarred with many cicatrices. No catheter could be introduced through the stricture, which commenced just in front of the bulb. An olivary whalebone bougie was wriggled through the contraction, and struck what was apparently a calculus, which could be felt through the rectum or perineum. With a little trouble the bougie was worked past the obstruction into the bladder, and there retained.

On January 9th the instrument was removed, and two hours afterward the patient expelled a phosphatic calculus about an inch long, resembling a piece of the stem of a common clay smoking-pipe. The stricture was gradually dilated, an olivary elastic catheter being passed every other day. During the whole of the period the patient was up and about the ward giving a helping hand.

On January 28th Mr. Teevan introduced No. 20 F., and, as the patient was able to pass the catheter for himself, he arranged to return home in a few days.

On the 30th Mr. Warrilow introduced No. 20.

On the 31st, 9 a. m., patient stayed in bed, complaining of headache and pain in the limbs. Pulse 100; temperature 99.8°. Temperature 100° at 8 p.m.

On February 1st he was more indisposed. Temperature 103°; pulse 120. In the evening he suffered much from dyspnœa and paroxysmal pain in the left hyprochondriac region. Had a subcutaneous injection of morphia, which relieved the pain, and an enema, which removed the constipation and tympanites. The abdomen was covered with a linseed-meal poultice. Ordered brandy, milk and ice.

February 2d.—9 a. m.: Great pain in region of heart. Countenance anxious. Knees drawn up. Abdominal tenderness in left hypochondriac region. Pulse 99; temperature 120°. At 5 p. m. the patient commenced vomiting a clear fluid at intervals. Tongue covered with a thick yellow fur. Body bedewed with a cold clammy sweat. Vomiting ceased at 11 p. m. Ordered nutrient enemata and morphia.

3d.—Vomiting recommenced at 5 a. m., and continued throughout the day. The patient was examined by Dr. Fish, under whose care he was now placed. Dullness over left lung in axillary region; vocal fremitis diminished; shrill tubular note. Dr. Fish pronounced the pain to be pleuritic. Linseed-meal poultices were applied over the back and side, the nutrient enemata were discontinued, and the patient was ordered brandy and milk. Temperature 103°; pulse 130.—10 p. m.: Temperature 100°; pulse 120.

4th.—9 a. m.: Temperature 100.2°; pulse 99. Delirious

part of the night, but obtained some sleep in the early morning. Free from pain. Bowels open.

5th.—9 a. m.: Temperature 99.2°; pulse 132. No vomiting. Respiration more hurried. Takes ten ounces of brandy.

6th.—Slept well. Decided improvement. Tongue clean. Bowels open; motions solid. Temperature 99.2°. 8 p. m.: Temperature 100°.

7th.—Physical signs much the same. Takes nourishment freely. Temperature 99.2°. 8 p. m.: Temperature 100.8°.

8th.—Temperature 99.4°; less dullness on percussion; less pain. 8 p. m.: Temperature 100°.

9th.—Temperature 99°; face pinched and dusky; breathing hurried; respiration 26; suffers but little pain. 8 p. m.: Temperature 99.8°.

10th.—Temperature 99.2°; restless and delirious in the night; takes but little nourishment. 8 p. m.: Temperature 99°; more pain in side; bulging in intercostal spaces; more dullness on percussion; had severe paroxysms of dyspnœa at night.

11th.—Had a restless night; great pain in side; more bulging in intercostal spaces; area of dullness greater. About 8:30 a. m. the patient asked to be raised in bed, when he suddenly fell back asphyxiated.

Necropsy, Feb. 13th, 10 a. m.—Chest: Left pleural cavity contained upwards of a quart of muco-purulent fluid; left lung compressed and flattened, weighed only seven ounces and a half; pieces of it sank in water. Right lung weighed twenty-two ounces and a half, and contained a few tubercles. Heart healthy. Abdomen: Spleen and liver healthy; left kidney seven ounces, right one six ounces; they were both examined microscopically by Mr. Augustus Pepper, who pronounced them healthy. The bladder and prostate were healthy; there were two false passages extending into the substance of the gland for a short way, which were lined with a mucous membrane, and were evidently of considerable age. In the urethra the remains of the stricture could be seen, and it was evident that the stone, which was phosphatic, had been formed in the dilated portion of the canal behind the contraction.

Remarks by Mr. Teevan.—The patient when quite cured of

his local ailment, and about to return home cured, was attacked by pleurisy. Unfortunately the man's constitution had been deteriorated by the fever and ague from which he had suffered whilst in the tropics, so that he was predisposed to catch cold, and formed one of the many victims to the excessively low temperature which prevailed at the time of his illness. Happily, in the present instance, no operation had been performed, so that surgery must be held blameless for the unfortunate termination. When the patient was admitted he was not suffering from retention, and was able to pass urine by the side of the calculus. The case illustrated what could be achieved by apparently so insignificant an instrument as a fine whalebone bougie, which in the present instance had effected the dilatation of the stricture and the expulsion of the stone.

Somerset Hospital Cape Town, Cape of Good Hope.—Inguinal Aneurism; Ligature of the Right Common Iliac Artery; Recovery. (*Under the care of Dr. A. L. Chiappini*).

The following notes were taken by the late Dr. W. H. Wood:

W. H——, forty, was admitted on January 2d, suffering from a very large inguinal aneurism, which could be distinctly seen pulsating through his trowsers, and forming a prominence on the right side. He was of intemperate habits, but had never had syphilis. He stated that about fifteen months before admission he was engaged in loading a vessel with copper ore at night, and that when lifting a particularly heavy bag he felt something give way on his right side, and he immediately had very severe pain in the right groin, and about three hours after this, on putting his hand within his trousers-pocket, he felt a lump, which was not very hard, and about the size of a pigeon's egg. At nine next morning he showed it to a medical man, who ordered him to poultice the swelling, which was now very hard. He lay up and poulticed for nearly a week, when, the pain having diminished, he returned to work, and two months after again showed it to the same gentleman. The tumor was now the size of a hen's egg, and the man noticed for the first time that it pulsated. He was told to continue the poultices. Time passed on, the man being at work on and off; the tumor still increasing and causing

great pain down the right leg. About three months before admission the "lump" was, he said, about the size of a "baby's head," and he again showed it to the doctor, who advised him to poultice continually. A few weeks before admission he saw another medical man, who immediately ordered him to the hospital, to which he went by sea.

On examination, an immense pyramidal tumor was seen, pulsating with a strong expanding impulse, occupying the whole of the right iliac region, being raised about five inches above the surface; a tape lay across it measuring just a fraction under twelve inches from edge to edge. The upper limit was level with the crest of the ilium; to the left it approached closely to the pubes, while it was prolonged downwards into the thigh, Poupart's ligament being tightly stretched over its lower portion. The tumor was soft and elastic; at the apex the sac was very thin, and the skin a dusky purple, and it was evident it mussoon give way. The right leg was considerably swollen; the temperature was the same in both legs.

On the 8th, or six days after admission, the patch at the apex was larger and thinner, and after consultation it was decided to operate the next day.

On the 9th Dr. A. L. Chiappini, the visiting surgeon, accordingly proceeded to operate, making a semilunar (from the small space at his disposal, almost a semicircular) incision, with its convexity at the furthest about five inches from the umbilicus. The peritoneum, which was not adherent, was pushed back with the intestines, and the common iliac artery exposed (as was expected, there was nothing to be seen of the external iliac artery) and ligatured with thick silk. One end of the ligature was left hanging out, and carbolic dressings were applied to the wound, which was brought together by a few sutures. He was then put to bed, and the leg, previously shrouded in cotton wool, was surrounded with hot sand bags and hot-water bottles. In the evening his pulse was 90; he had not much pain anywhere. Had half a grain of morphia. Had a good night and passed water freely. The next morning the tongue was clean; pulse 112; temperature of body 99.5°. At 9 a. m. the pulse was 100; the temperature 99°. Repeat the sedative draught.

He continued without one bad symptom, not suffering so much from pain and numbness in the leg as before the operation, and having perfect sensation in the leg. The tumor very rapidly decreased, at one time, however, threatening to suppurate, and on the 20th day after the operation the ligature came away. The man is now in perfect health, and working as a navvy on the railroad works.

St. Bartholomew's Hospital.—Three Cases of Chronic Meningitis, Following Injury to the Skull. (*Under the care of Dr. Southey.*)

Severe localized headache, delusions, mental aberration, signs of paralysis, epileptic fits, and other symptoms as sequelæ of injuries of the skull, are more familiar to surgeons than to physicians. During the present year we have published in the *Mirror* many cases of fracture or other injury to the skull followed immediately, or after a longer or shorter interval, by symptoms of cerebral lesions or mental impairment. We may indicate some of the cases included in the instructive series taken from Dr. Hulke's clinique at the Middlesex Hospital, and distributed over many issues; two cases reported from Mr. Jonathan Hutchinson's wards in the London Hospital; and the extremely interesting cases that were under Mr. Davis-Colley's care in the Seamen's Hospital, Greenwich.

The following cases will, in addition to their own intrinsic merits, give increased importance to those just referred to. They show that chronic meningitis may follow blows on the head at a period so remote that the connection between the two may be entirely overlooked or misinterpreted. As Dr. Southey pointed out in some comments on these cases, the difficulty of tracing any connection between the injury and the symptoms of meningitis is usually increased by the circumstance that when the patients come under observation they are often unable to give any trustworthy account of themselves. The symptoms may point distinctly towards chronic meningitis, but the initial lesion is not made known. The presence of tuberculosis is too often accepted as an ever-ready explanation of the phenomena; whereas these cases of late traumatic meningitis are wholly unlike, in course,

duration and morbid anatomy, tubercular meningitis, though simulating it in their clinical characters.

CASE I. *Chronic Cerebral and Spinal Meningitis occurring Four Years after a Fall from a Window; Death.*—Mary Ann S., aged twenty-seven, a pale but fairly-nourished woman, was admitted Nov. 5, 1878, with vomiting and diarrhœa. Her appearance was not prepossessing, in consequence of a deep indentation of the bridge of the nose, the result of an old fracture. The mental state was peculiar. She could give no account of her illness; but she possessed all the special senses, as well as power of motion and of sensation, and a little, though degraded, intellectual power. Though listless, morose and indifferent to questions directly addressed to her, she every now and then threw a remark into her mother's statement respecting her ailment, confirming, correcting, or repudiating it indiscriminately. Her memory was obviously defective, but there was an apparent desire not to mislead or to have her history misstated.

The remains of the old fracture of the nose suggested an inquiry into the circumstances of the accident. It was alleged that four years previously the patient fell out of a window (the height was not ascertained), and was picked up unconscious and bleeding from the nose. Consciousness soon returned, and beyond the depression of the bridge of the nose, she was not thought to have suffered any particular damage. She set about her usual domestic duties at once, and made no further complaint. About two years after this she married, and was confined of a healthy child about eighteen months afterwards. She was suckling the child, aged six months, at the time of admission, and had a moderate amount of milk in both breasts. After her confinement she remained low-spirited and ailing, and five weeks before admisson her husband and relations noticed her conduct to be strange; she talked a good deal of nonsense, they said, occasionally wandered about the house at night, and was unable to give any good reason for her vagaries. About a fortnight before admission her hands became red, swollen and painful, so that she could hardly move her fingers. This was attributed to rheumatism. She gradually became more delirious and difficult to restrain or keep in bed, and three days before entering the hospital vomiting supervened. She

was stated to have been healthy, of temperate habits, industrious and happy in home.

When taken into the hospital she walked up stairs slowly and stiffly, and required little help to undress herself. She seemed stiff and weak, and moved her head stiffly, and she complained of pain down the spine, especially at the cervical portion. There was, however, no tenderness on pressure over any of the spinous processes. The pupils were equally dilated, and reacted slowly to light. The physical signs of heart, lungs and abdominal viscera were normal. The tongue was thickly furred and indented at the edges. The bowels were confined. Temperature 99.4°; pulse feeble, 92; respiration 23, tranquil and regular. At first she refused to take some beef-tea, saying she should only bring it up again. After a little pressing she did take some, and at once ejected it. Urine: thirty to forty ounces passed daily, acid; sp. gr. 1030; yielding a deposit of urates, and containing a trace of albumen, but no sugar.

The diagnosis was chronic cerebral and spinal meningitis, but whether of tubucular nature or not was left undecided.

She was fed frequently with small quantities of milk and beef-tea, and had nutrient enemata whenever the stomach rejected food. She was quieted with draughts of chloral hydrate and bromide of potassium combined; occasionally she needed hypodermics of morphia. She had alterations of excitement and depression. On some nights her cheeks would be flushed, and she was noisy and troublesome and called out violently; and then would follow fits of extreme depression, in which she was completely indifferent to what was done for her, perverse, willful and apparently conscious of the trouble she was giving, but choosing to pass her urine and fæces in bed. At the professional visits she could rouse herself and answer questions rationally, though not always correctly; afterwards she would ramble and mutter incoherently. On one occasion she cried when asked about her baby; on another she denied ever having had one.

On Nov. 9th and 10th the temperature rose to 101° and 101.8°, and on the 11th it ranged between 98.4° and 101.8°. It never reached 102°.

Rarely she enjoyed her food, and went twenty-four hours with-

out vomiting. By ophthalmoscopic examination, the left optic papilla was found to be redder than natural, and the veins were rather swollen, but there was no effusion.

Towards the end of November the periods of mental excitement became fewer, and she remained perfectly passive, absolutely demented. On the 28th she was violently convulsed; the fit lasted half an hour, and was succeeded by rigidity of the legs which did not pass off for some hours. During the seizure the pupils widely dilated. A comatose sleep followed, and on awakening she was more rational, and for several days after there was less vomiting. Urine, sp. gr. 1032, with traces of bile and albumen, but no sugar.

On Dec. 2d she lay huddled up in bed like an ordinary case of dementia, quite quiet, and appearing to suffer pain in the neck when moved. Pupils dilated, face flushed; pulse very feeble, regular; temperature normal. The right optic papilla was hyperæmic; the left was ill-defined at the margin, and the adjacent retina was hazy. There was also some disturbance of the choroidal pigment.

On Dec. 8th at 3 p. m., she had a severe rigor, during which the axillary temperature was 98.5°; pulse 136. No reactionary fever followed. She daily grew feebler, but did not exhibit any signs of paralysis, and could turn herself in bed up to the last. She died quite suddenly on Dec. 16th.

Necropsy (Dec. 17th).—Thoracic and abdominal viscera all healthy, except the liver, which was slightly fatty, and the gall bladder contained four gall-stones. Head: The skull-cap was somewhat adherent to the dura mater about the Pacchionian glands and in one or two other places. The pia mater over the base of the brain was thickened and opaque, and the veins were swollen. The convolutions of the hemispheres were flattened. The pia mater, lining each side of the Sylvian fissure, on both sides was adherent, as was also the adjoining surfaces of the two cerebral hemispheres, preventing a proper view of the corpus callosum, without forcible separation. The lateral ventricles, the third ventricle, and the aqueduct of Sylvius were all widely dilated, and contained a slightly turbid serous fluid. The choroid plexuses were collapsed. The lining membranes of the ventricles were opaque, the opacity extending down into the fourth ventricle, and

then to the space between the peduncles of the crebrum. At this spot, a dense opaque membrane, continuous with the pia mater, abruptly closed the passage, so that the intra-ventricular fluid was cut off from its normal communication with the spinal arachnoid channel. Thus a false membrane, the product of chronic meningeal inflammation, extended from the posterior part of the median lobe of the cerebellum to the posterior pyramids of the medulla oblongata, and blocked the natural passage by which the cerebral and spinal subarachnoid fluids intercommunicate. As a result of this, the ventricles of the brain were dropsically distended, and the convolutions flattened from compression. No tubercle or appearances at all resembling it were discoverable on the pia mater, or on the walls of the smaller arteries.

The brain is preserved in the hospital museum.

The question is, Did the chronic meningitis depend upon and originate from the injury received at the fall four years before?

CASE II. *Fall on the Back of the Head, followed Four Months after, by Cerebral Symptoms; Death.*—John A., aged sixteen, a fairly nourished, but pale, lymphatic lad, with a vacant, half-imbecile expression, was taken to the hospital by his mother on July 10th last. He cried and sobbed in a frightened, child-like manner, and seemed intellectually degraded. His skin felt hot, dry and desquamating; his tongue was moist and a little furred; pulse 108, regular and small; respiration about 20. The temperature would be normal or below normal in the morning, but suddenly rise to 102° between 2 and 8 p. m. He walked up stairs, but stood like a person weak in his knees, and with his legs somewhat wide apart. He required help to undress himself, but not because of any special paralysis. The only muscle in which any impairment of power could be discovered was the external rectus of the left eye. After he was in bed he assumed the crouching attitude, lying habitually on his left side, with his knees drawn up and his hands between his thighs, as if always feeling cold.

The physical examination of the heart, lungs and abdominal organs elicited no facts indicative of disease.

The patient had enjoyed perfect health, and intellectually had been equal to boys of his own age, up to Christmas last (1878-79), when, while sliding on the ice, he had fallen down and struck the

back of his head heavily, suffering some concussion of the brain, and was laid up in bed at home for a week after the accident. He resumed his employment, however, and was able to do his work as well as before his fall up to May 1st. About this date he had a bad attack of vomiting, and since that vomiting the lad seemed to his mother to have lost all his wits, because dreamy and apathetic, and able to remember nothing properly. From May to July, the date of his admission, he lay at home in bed most of the day, vomiting frequently, but still keeping a good deal of his food down. Latterly he had troubled his family very much at night-time, waking up, screaming violently, keeping everyone awake about him, sobbing like a naughty child, and refusing to be comforted or quieted. By day he was drowsy, apathetic, slow in responding to questions, but possessed of ordinary discernment; while at night he was restless, terrified and irrational. His bowels were inclined to be costive. He had no particular thirst, and he passed an average of three pints of urine per diem, sp. gr. 1020, containing no albumen, and showing no noticeable excess of earthy phosphates.

He was ordered tepid baths, with occasional cold spinal douches; a wet rag to his forehead when his temperature was high; a grain of calomel, followed by a saline, when the bowels had been confined for forty-eight hours; a nourishing diet, but no stimulant.

Observations in the hospital entirely confirmed the account received about him. On some nights he slept pretty quietly, and others he would scream and sob and disturb the ward. He behaved like a great baby at all times, but was clean in his habits. He did not complain of much pain in his head, or appear to suffer headache, but he often asked to have his head chopped off, and was at times possessed with the idea that it was desired to chop it off.

He took very little solid food, plenty of milk and fluids; as a natural consequence, he passed large quantities of urine, 70 to 115 ounce sometimes per diem. Scybala accumulated in his colon, and required clearing out artificially once. He only vomited once or twice in July; entertained a variety of delusions; thought his bed was inhabited first by rats then by eels, and that various

animals, elephants, visited him. A restless noisy night was, however, often succeeded by vomiting on the following day.

On August 6th a careful ophthalmoscope examination was made by Mr. B. Vernon, who reported the right optic disc extremely red; left disc red, in parts ill-defined; retinal veins engorged.

About the end of August no more delusions were heard of. The temperature-chart was carefully kept from July 10th to Aug. 14th. For three days in succession the temperature would be maintained between 101.5° and 104°, then it would drop to normal or below (97.2°) for two days, and then rise again gradually each night one or two degrees until it reached 104.8°, or, as it did on one occasion, 105°. Latterly he complained more of headache; the temperature fluctuated less, and was seldom above 102° or below 99°; he became weaker muscularly; his tongue was tremulous, and although he could sit up in bed the effort to do so brought on intense pain in the head and vomiting. Tâches cérébrales were well marked.

Counter-irritation was applied over the occiput, and iodide of potassium was given internally, and chloral hydrate and bromide of potassium occasionally. In September recourse was had to hypodermics of morphia, with great relief to pain and vomiting. On September 15th it was determined to put a seton in the back of the neck. The first attempt was made with a silk thread, which was soon pulled out again. Two days later he was anæsthetized with chloroform, and a proper seton was introduced. He had scarcely recovered from the effects of the chloroform, four hours only having intervened, when he had the first of a series of epileptic fits, recurring at short intervals until death on the same evening. Death occurred ten weeks after his admission, or about twenty weeks after the manifestation of the first cerebral symptoms, and over nine months after the receipt of an injury to the head.

Necropsy.—The scalp and calvaria were healthy. There were many tough adhesions at the fork of the optic commissure, and a layer of lymph on the surface of the olfactory nerves and the adjacent cerebral hemispheres. The convolutions were flattened on both sides, and the whole base of the brain was covered with

tough, but not thick, deposits of lymph. The sides of both Sylvian fissures were adherent, and the cerebral hemispheres were adherent in front. The fourth ventricle was closed by adhesions, and in each lateral ventricle three or four ounces of clear serum were found. The iter was closed, but seemed not quite impervious on dissection. The brain-substance was healthy; there was no tubercle anywhere. The spinal cord and membranes were also healthy. There was no tubercle or evidence of disease in the lungs or bronchial glands. The heart and the abdominal viscera were likewise free from evidences of disease.

The following is the third, and last, case of this interesting series:

Esther S——, aged twelve, an anæmic, scrofulous, ill-nourished child, was admitted into Faith ward on March 4th, 1875. She had a vacant expression, with a knitted frontal frown. She lay curled up in bed, refused all blandishments, and pulled the bed-clothes tightly round her whenever an attempt was made to examine her. She seemed deaf, would not answer questions, and was altogether morose. She walked into the ward, and on inquiry it came out that she had always been wayward and ill-tempered. About Christmas time (1874) she fell violently on the back of her head. No notice was taken of this, but some time afterwards she became dull of hearing and appeared deaf, although she sometimes undoubtedly heard what was said; she was thought to be shamming. There was great difficulty in getting her out of bed in a morning, indeed she generally had to be pulled out. Nine weeks before admission she was confined to her bed entirely, on account of constant headache, and of aching pain—supposed to be rheumatic—in the limbs and joints. She was capricious and restless, and often moaned or cried out during the night, or when left alone. Her bowels were constipated. Ever after the fall she was, her mother alleged, an altered child, though little notice was taken of the fall at the time.

On admission, the temperature was normal; pulse 96, irregular and feeble; respiration 20. The heart's action was irregular and slightly intermittent; the impulse was normal in situation, and there was no increase of præcordial dullness. There was good resonance over both lungs; the left supra and infra-clavicular

regions were rather flat, and the breath sounds were feeble there. There was no evidence of any abdominal mischief. Lymphatic glands were everywhere natural to the touch. The urine was normal in quantity and character, but was chiefly passed in bed.

Except that she put out her tongue when asked to do so, there was scarcely any intelligent response to questions. At times she was very troublesome, and swore and made a great noise. The pupils were rather dilated, but there was no sign of paralysis of any of the ocular muscles. No ophthalmoscopic examination could be made, but it was evident from observations she occasionally made, that she could see.

She always fed with a spoon; on some days she would take a fair amount of nourishment and would be more awake, on other days she was so drowsy that she could not be got to swallow; she would even go to sleep with her mouth full of food, and had to be well shaken before she could be roused to masticate the food which perhaps was put into her mouth half an hour previously.

On March 12th she recognised her mother, and her face was flushed with excitement at the visit. Temperature 101.2°; pulse 84. The bowels had not been open for three days. She had vomited only once since admission. The eyelids were half closed and she groaned and occasionally screamed out.

On the 16th she stared about wildly, picked her nose, rubbed her forehead, pulled out her eyelashes, and moaned whenever she was disturbed. Pulse irregular, 108 to 120. After this she became gradually feebler and more soporous, and for the last few days of her life had to be fed by enemata. She died on March 21st, seventeen days after admission, or three months from the commencement of the symptoms.

At first a mixture containing ten grains of chloral hydrade and of bromide of potassium was given every six hours, but this was discontinued after the second day, after which the treatment became purely expectant.

Autopsy (March 22nd).—The pia mater and arachnoid were highly injected. There was some flattening of the convolutions from increase of the intra-ventricular fluid, four or five ounces of which escaped at the infundibulum just behind the optic commissure when the brain was removed. There was no appearance of

effused lymph at the base of the brain, the substance of which was everywhere sound and healthy-looking. No tubercle was discoverable in the pia mater or fine vessels. The gray substance was, perhaps, rather pinker than natural, and a tiny blood-clot, the size of a pin's head, was found in the center of the pons Varolii. The olfactory bulbs were very thin. The other organs of the body were wasted, but otherwise healthy.

Remarks.—It would seem that in this case, too, some false membrane or adhesion prevented the free circulation of the sub-arachnoid fluid, and led to dropsical distension of the ventricles and consequent pressure upon the brain-substance. The alleged fall or injury may or may not have been the starting-point of subsequent changes. It was attended by serious concussion, and was passed over as a trifling circumstance. The original small intellectual endowment made it difficult to fix the exact date of the perverted cerebral functions.

Middlesex Hospital.—Case of Fracture of the Base of the Skull (*Under the care of Mr. Hulke.*)

The following report completes the series of cases of fracture of the skull.

CASE IV. *Extensive fracture of the base of the skull by a fall upon the street pavement, probably in an epileptic fit; bleeding and serous oozing from the ear; diffuse meningitis; death on the fifth day.*—The extent of the injury to the skull in this case is remarkable, occasioned as it presumably was by a simple fall upon the pavement—not from a height; for it can hardly be reasonably entertained that the man had been struck a violent blow on the head in the open street at midday without its having been witnessed by others; the motive of theft, too, was wanting, and his character was inoffensive and good. It was ascertained that he had been epileptic for eight years, and that the injury to his elbow had been sustained in a fall about two months before the present accident. It is noteworthy, in relation to the epilepsy that no morbid appearances were visible in the brain or its membranes, which could be assigned to a date earlier than the injury for which he was admitted into the hospital. The diffuse meningitis to which his death is referable, started apparently from the

fractured pars petrosa of the right temporal bone. No explanation was found for the sudden strong spirt of blood from the ear on the fourth day; no wound of the carotis interna was found, and the cessation of the bleeding forbids the supposition of such source. The blood-pressure in the cerebral sinuses is known to be sufficient to expel their contents in a strong stream to the distance of more than one foot.

Soon after midday on Jan. 2d, a working jeweler, aged twenty-five, was found insensible upon the street pavement, a few yards distant from the door of his lodgings. The police brought him to the hospital; on reaching it he was still unconscious. Above the right ear was a small scalp-wound, not reaching the bone, in which no irregularity suggestive of fracture could be felt with the finger. Blood trickled from the auditory meatus. Over the outer border of the right orbit was a slight graze, and under the conjunctiva of the eye blood was extravasated. The right elbow was stiff, and it was discolored by an old bruise. Whilst being taken into the ward he vomited a coffee-ground-like fluid with some red blood-clots, and became conscious. In the afternoon his temperature in the armpit was 99° Fahr., and at 9 p. m. it had risen to 100°. The hair was cut, ice kept on the head, and thirty grains of compound jalap powder were given him.

On the 3d the bloody appearance of the fluid oozing from the right auditory meatus had changed to serous. This ear was quite deaf. He had had a restless night, and complained of intense headache, which was somewhat relieved by lying on the left side. The bowels not having acted, a compound colocynth pill was given, followed by a draught of compound infusion of senna, which purged him freely.

Next day the headache was still intense, and the temperature was high. Six leeches were placed on the right temple, and mercurial ointment was rubbed into both arms. The leeches were repeated later in the day.

On the 6th, early in the morning, the nurse was alarmed by the spouting of bright-red blood from the right auditory meatus. She stated that it was thrown out to some distance, and was not a welling-up or oozing; the amount was guessed at two ounces. The bleeding ceased spontaneously, and did not recur. Till then

the serous discharge noticed on the second day had persisted. Throughout this day (the fourth after the injury) his mind wandered, but in the evening when impressively spoken to he gave opposite answers. In the night he became very delirious. At 9 p. m. the temperature was 99°. At 4:30 a. m. on the 7th he was convulsed, his face was blue, and he died.

Necropsy ten hours later.—Weather cold; ground covered with snow. Above the right ear was the scalp wound mentioned above, one inch long. About it, and also under and in the temporal muscle, was extravasated blood. A crack, two inches long, descended vertically through the parietal into the pars squamosa. From this a fissure crossed the pars petrosa, cutting the meatus auditorius internus, and ending in the foramen lacerum posticum basis cranii. From the meatus a second crack ran forward into the foramen lacerum medias. Other cracks joining these circumscribed a lozenge-shaped piece of the upper surface of the pars petrosa, which was quite detached. On lifting this as a lid the tympanum and labyrinth were seen plugged with blood-clot. A large blood-clot, which had its source in a large posterior branch of the middle meningeal artey, was found upon the outer surface of the dura mater in the temporal region, beneath which the cerebral convolutions were flattened. In the left side of the skull, opposite to the direct injury, under the dura mater lining the pars squamosa, was a small clot, of the size of a flattened filbert. The convolutions of this temporo-shenoidal lobe were superficially ecchymosed. The basal pia mater was congested, and its web was infiltrated with a sero-purulent, opaque, yellowish fluid. On the arachnoid, over the pons and medulla, was a thin film of exudation, and the lateral ventricles contained about four ounces of sero-purulent fluid.

CASE V. *Fall off two Steps; Copious Bleeding from the Ear and other Symptoms Strongly Suggestive of Fracture of the Base of the Skull; Recovery.*— In this case the recovery of the patient gave no opportunity of verifying the diagnosis, but the occasion of the injury—a fall on the back of the head off two steps; profuseness of the bleeding from the ear, to the extent of saturating his clothes, its continuance during several hours, and its replacement by a serous oozing; the deafness, much greater than could

be fairly attributed to the rent in the membrana tympani and to the damping of the vibrations of the auditory ossicula by entangled blood-clot, and its continuance, together with the long stupor —concur in justifying the belief that here a fracture of the base of the skull crossing the left petrosal bone had occurred.

On the 20th of March, 1875, a large, heavy man, aged thirty-three, fell backwards off two steps of a doorway on to the street pavement. He was taken up insensible and brought to the hostal. On reaching it he had already so far regained consciousness that he answered when spoken to, but it was necessary to raise the voice, indeed to shout; and his reply was not always suitable to the question. When his attention was not thus roused he lay as in a deep stupor. Blood was issuing freely from his left ear, and by the amount upon his clothes it was plain that he had lost a large quantity. The most careful examination of the vertex and sides of the head failed to detect any mark of fracture or even a bruise. At nine o'clock the same evening he was still in the same stuporose state, but he occasionally tossed restlessly about and groaned. The blood still oozing from the ear was thinner and more serous. The left pupil was now widely dilated; at the time he was admitted both pupils were contracted. Not having micturated, his bladder was emptied with a catheter.

Next day oozing from the ear had ceased. The man was still very drowsy. Temperature 99.8°; pulse 80. Ice was now kept on the head. On 22nd there was extreme tenderness on and above the left mastoid process. Six leeches were put on this spot. Next day there was less tenderness and pain; less drowsy. He complained that his left ear was deaf.

On April 6th a laceration in the upper part of the membrana tympani was detected.

Three days after this note he was permitted to go home, and enjoined to report himself from time to time, which, however, he failed to do. It is believed that had he not quickly resumed work, recourse to the hospital would soon have been had for advice.

Royal Westminster Ophthalmic Hospital.—Case of Severe Neuro-Retinitis in Both Eyes, Followed by Separation of Both Retinæ; Repeated Tappings. (*Under the care of Mr. Macnamara.*)

For the following notes we are indebted to Mr. J. G. Mackinlay, registrar.

E. S——s, aged twenty-seven, attended as an out-patient Sept. 3rd, 1878. She had been married between five and six years, and had had three children born at full time; the eldest died in convulsions when two months old, the other two were living, and appeared healthy. She had had no miscarriages, and had always had good health. Was about six months and a half advanced in pregnancy. She stated that vision began to fail in the right eye about ten months before, and had gradually got worse. The left eye began to fail about six or eight weeks before. With the right eye she read Jaeger No. 20 with difficulty; with the left, Jaeger No. 8 at six inches; V = 20-100. On examination with ophthalmoscope the right disc could not be seen, but the vessels were visible coming out of a large dense white effusion which ran across a portion of disc obliquely, and for some distance above and below it. The left disc could be seen; vitreous hazy, and had fine movable bodies in it; no effusion of white limph on retina. No albumen in urine. Ordered mixture of per-chloride of iron with quassia.

Sept. 17th.—Condition the same. The husband attended to-day, and stated that he had a sore (for which he was cauterized) some three months before his marriage, but no history of any secondary symptoms could be obtained. The patient was ordered to continue mixture with a drachm and a half of perchloride of mercury added to each dose.

Oct. 22d.—Treatment has been continued. The upper (apparent) edge of the right disc could now be faintly seen, still there was a dense mass of white effusion over portion of disc, and a thinner extensive mass of effusion around it, and portions of vessels seen here and there plunging in and out. The left disc could not be seen; numerous small and some large floating bodies in the vitreous, and the retina was separated for about its inner fifth.

On Oct. 29th the right eye read Jaeger No. 20 at six inches,

the left eye read Jaeger No. 16 at five inches. Separation of retina was noticed to-day in the right eye for about its lower and inner fifth.

The patient did not attend between Oct. 29th and Jan. 7th, 1879, but sent for her medicine. She was confined on Dec. 13th. The labor passed off well. Child was stated to be healthy; the mother was not nursing it. She stated she had an attack of inflammation in right eye a fortnight ago; the pupil was now small, irregular, and quite immovable to light. The iris was somewhat discolored, the globe slightly injected, and especially so round the ciliary region; vision was reduced to *nil*. In the left eye the pupil was large, and acted somewhat to light; vision equals perception of light.

On January 14th she was admitted. The injection of the right globe was less; the other conditions of both eyes were unaltered. Under ether, Mr. Macnamara, with a Graefe's knife, punctured sclerotic of left globe at inner and lower part, about half an inch from margin of the cornea. No fluid escaped, and the knife was inserted about a quarter of an inch further back, and fluid (not considerable in quantity) then welled up under the conjunctiva. Mr. Macnamara then tapped the right globe with Graefe's knife, puncturing the sclerotic at outer and lower part of globe about three-quarters of an inch from margin of cornea; fluid at once welled up in considerable quantity, and Mr. Macnamara then made a small slit in the conjunctiva half an inch away from the puncture, and allowed most of the fluid (which was of a pale yellow color) to escape. In both operations the knife was slightly rotated after its entrance into the globe. The eyes were padded. No sickness after the ether.

On the 15th both globes were somewhat injected; with the left eye patient could count fingers at fifteen inches and distinguish a half-crown piece.

On the 21st July patient left the hospital. She stated that she decidedly saw better, and could find her way about the ward.

On the 29th vision in right eye was unimproved, but with left eye she could read Jaeger No. 20 at six inches. The detached retina was still seen in the same position, but not extending so far up.

On Feb. 11th the left eye read Jaeger No. 20 with difficulty at five inches. Between this date and the 25th she miscarried.

On March 4th the retina was more detached in the left eye; the separation extended over almost the whole of the inner side of the fundus. She could still with difficulty make out Jaeger No. 20. She was admitted, and, under ether, Mr. Macnamara again tapped through the sclerotic with Graefe's knife and evacuated a quantity of yellow fluid, most of which is left under the conjunctiva. There was slight sickness after the ether, and next morning the globe was much injected.

On the 11th she thought her sight was not much better. The globe was still injected. She left the hospital.

On April 8th the right globe was quiet, but was getting soft. The fundus could not be seen. Vision equal to doubtful perception of light. In the left eye the retina appeared in much the same condition as before; if anything, detachment had rather increased. Vision, Jaeger No. 20 at six inches, with difficulty. Tension of left eye normal.

On May 13th the retina was still more detached in left eye; could only see fingers move. She was admitted, and Mr. Macnamara again tapped through sclerotic as before, and evacuated fluid. There was very little injection of globe after the operation. The patient left the hospital on the 17th. V = counting fingers.

On the 27th the right globe was getting very soft. With the left she saw fingers move, and retina was as much detached as ever.

The general treatment was sometimes for weeks together the perchloride of mercury in drachm and a half doses, with iron, this being occasionally omitted for a time, and small doses of strychnine given.

National Hospital for the Paralyzed and Epileptic.—Case of Paralysis with Wasting of One Lower Extremity. (*Under the Care of Dr. Buzzard.*)

We saw a few weeks ago the patient whose case is here described, for notes of which we are indebted to Mr. Broster, resident medical officer. There are many points of interest in the

case, especially in reference to the question of causation and treatment of perineuritis.

Agnes P——, aged thirty-six, the mother of seven children, who had never miscarried, applied at the hospital on April 30th, 1879, on account of loss of power and wasting of the right lower extremity. She had never been strong, and about five years ago suffered from a very severe attack of neuralgia of the left side of the face, which lasted five months. During the attack she lost the sense of smell, and for two years could not discern even very strong odors. In her various pregnancies the right leg always (with the exception of the last occasion) became swollen, and required an elastic bandage. After her confinements she had felt pains shooting up from the right ankle into the knee. The pain was very severe, preventing sound rest. It usually began on the second day of confinement, and lasted ten or twelve days. In October, 1878, she lost her child, and about this time felt a pain in the right knee, of a "jumping" character, shooting up the inside of the thigh. She did not know of any cause for the pain. It got worse from day to day, causing great difficulty in going up stairs. She did not notice any swelling of the knee or leg. Rest gave great relief. The pain lasted about three weeks, and was followed by a feeling of numbness. In February this year she lost much rest in consequence of having to nurse a sick child, and then felt the old pain return in the right knee and thigh, the limb always feeling very cold. Since that time the pain has got much worse, extending up the thigh to the bottom of the back, so that she has been scarcely able to move. In March she felt that the right leg was growing weak, and that she could only move it with difficulty. She noticed also that the right knee became swollen. When she was taken to the hospital she was unable to stand by herself.

The patient was a stout, healthy-looking woman with a somewhat anxious expression of face. There was very marked wasting of the muscles in front of the thigh, and loss of power in the leg, causing the foot to drop. The knee could not be lifted, and there was no power to adduction. Some tenderness was complained of on percussion over the sacrum; there appeared to be slight synovitis of the knee-joint. The patellar tendon-reflex

was absent on the right side, normal on the left, and there was no reflex on tickling the sole of the right foot. Electrical examination showed that the irritability of the muscles of the thigh and tibialis anticus group was entirely lost to the induced current. The strongest currents were only felt as "something wet" over the skin of this extremity. On the back of this thigh a pinch could be felt, though not so keenly as on the left limb. In front of the thigh it was only recognized as touch. There was nothing whatever wrong with the left lower extremity. There was no history of, or reason to suspect, syphilis. Five grains of iodide of potassium were ordered to be to taken three times a day. In three or four days she felt much relief from pain, and within a fortnight was able to move her foot slightly in bed. On June 29th it was noted that during the last few days she had suffered from pain shooting down from the knee to the ankle. There was no alteration in the electric irritability of the muscles from what had been previously noted, but strong currents now caused a slight feeling of tingling. The power of adduction had improved. On July 1st the dose of iodide was increased to ten grains, and on July 16th to twenty grains, three times daily. On July 7th she found she could limp across the room by herself. On August 16th she said that occasionally she got a twitching along the inner side of the right thigh, and aching pain (especially in wet weather) all down the right lower limb. There were no sharp, shooting pains. She was now able to stand and walk without help of any kind, and could manage to get around Queensquare. A pinch on the front and inner part of the thigh could now be felt, but not keenly as in other parts of the body; far better, however, than when she was admitted. She recognized a touch, too, but "as though through several layers of calico." Soon after admission she had pinned some needle-work on to her knee instead of her dress, not recognizing that the pin had gone through her skin. There was still great loss of power in the anterior tibial muscles, so that voluntary dorsal flexion of the foot was impossible. The right thigh was an inch and a half, the right calf half an inch smaller than the left. She was now discharged, the treatment being continued; and when seen on Oct. 8th she could walk a

mile or two, the limb had increased in size, and she was quite free from pain. The patellar tendon-reflex was still absent.

Dr. Buzzard remarked that the symptoms of the case pointed to a perineuritis of nerves of the right lower extremity. The pain between the sacrum and the limb, and the fact that both the anterior crural and the sciatic district were affected, seemed to show that the seat of inflammation was probably high up, but whether in the cavity of the pelvis or in the cauda equina could not be decided with certainty. From the history, it looked as though the nerves might have been exposed to undue pressure from the fœtus in utero, but there was probably also a proneness to inflammation of nerve-sheaths, for the woman had suffered previously from very severe facial neuralgia. The great wasting of the limb and the absence of patellar tendon-reflex might at first appear to indicate a spinal lesion, but the fact that the mobility and sensibility were equally affected in this one limb only was sufficient, he thought, to disprove this. As regards the patellar tendon reflex, a lesion in the nerve-trunk sufficiently severe to cause great muscular atrophy and cutaneous anæsthesia, would be quite as likely to occasion its disappearance as a lesion of the grey matter of the cord. The electrical reaction, too, might equally depend upon a lesion of the nerve-sheath, which practically cut the nerve off from its nutritive center in the cord. The treatment adopted was directed to a supposed rheumatic condition. He did not think that the disease was of a syphilitic origin.

County Louth Infirmary, Ireland.— Strangulated Scrotal Hernia; Rupture of the Sac and Hœmatocele; Death. (*Under the care of Dr. Hercules Macdonnell.*)

Patrick M——, aged forty-five, an active, strongly-built man, was admitted on the 22nd of August, 1879. Five years previously he noticed a swelling in his left inguinal region, which was recognized as a hernia, and for which he subsequently wore a truss. On the evening of the 20th, when jumping from a cart, he felt a snap, and immediately experienced great pain; the scrotum grew large, and the pain increased. He was seen by

Dr. Blake, of Ravensdale, the following day. An effort was made to reduce the rupture, but it proved unsuccessful.

On his admission the following morning his face wore an anxous expression. On examining the scrotum a tense, bluish, semi-fluctuating mass was seen, measuring in the lateral circumference twenty-five inches, and from the perineum to the root of the penis twenty-two inches in circumference. The bowels had not been moved for three days. There was no retention of urine. A distinct enlargement could be felt in the left inguinal region. He was given a large soap-and-water enema and a hot bath. An incision was made into the extremity of the scrotum, and twenty-one ounces of a dark fluid evacuated. This gave instant relief. The cavity was washed out with a warm, weak solution of carbolic lotion; a linseed-meal poultice, spread on tenax, was applied with oil-silk outside. One-grain doses of opium every sixth hour were ordered, and milk and lime-water in small quantities allowed. At 8 p. m. the temperature was 99.8°, and a fair share of urine had been passed since admission.

He had no sleep that night, and had next morning some pain referred to the umbilicus. No motion from bowels; temperature 99.6°; vomited some greenish matter during the night. The œdema of penis had disappeared, as well as the redness on the right side of scrotum, but the left was very much enlarged. Some blackish matter came away on the poultice. Hernial neck now well defined; slight gurgling heard on manipulation. During the day no flatus or fæces passed; the vomiting was frequent and large in quantity, but not stercoraceous. In the afternoon he was given a long bath at 100° F. Half a grain of morphia was injected subcutaneously, and the operation for the division of the stricture was commenced, ether spray being used. No difficulty was experienced in reaching the sac, which was found very much thickened. On opening this the intestine was found to be bluish and congested, but not gangrenous. The stricture was relieved, but considerable and unaccountable difficulty was found in returning the intestine, of which there were three large loops down. The patient was removed to a warmed bed, some slight timulant given, and warm jars applied to the feet. Antiseptic dressings were applied. At 11 o'clock the patient complained of

feeling sick. Some flatus escaped, and during the act of vomiting he fell back in the bed, dead.

He was quite cheerful a few moments before, and complained of no pain.

Necropsy twelve hours afterwards.—Rigor mortis well marked. Penis and scrotum discolored, also left iliac region. On removing the silver sutures and prolonging the incision downwards, laying open the scrotum from apex to base, about a teaspoonful of dark-colored fluid escaped. The sac of the hernia was adherent to the tissues for a great part of its extent. The testicle was smaller and softer than normal. At the lower and back part of the sac, where it began to be reflected forwards, was a rent, extending for about an inch in a horizontal direction, of a lacerated description; this was sufficient to account for the hæmatocele, and also for the difficulty experienced in returning the hernia when the structure had been fully divided, a knuckle of intestine having passed through this rent in the sac. The filling up of the scrotum took place very quickly, and immediately on receipt of the injury.

The presence of a hæmatocele with scrotal hernia is sufficiently rare to merit notice; but the cause—viz, rupture of the sac from a violent jump—is in itself such a rare injury that a case verified by post-mortem examination is worthy of being recorded.

Tunbridge Wells Infirmary.—Case of Membranous Laryngitis; Tracheotomy; Recovery. (*Under the care of Mr. Rix.*)

For the following notes we are indebted to Mr. John Footner, F. R. C. S., house-surgeon.

E. D——, aged five years, was admitted May 13th, 1879, suffering from stridulous dyspnœa and sore throat, with a moderate amount of fever.

Her sister had been taken ill with similar symptoms two days previously, and died the second day of the disease. On admission, the patient was seen to be a rosy-cheeked child, very healthy looking and well nourished. Her pharynx and palate were congested, and tonsils much enlarged. There was no trace of false membrane anywhere visible. Respiration was performed with difficulty, stridulous, and much accelerated, 48 per minute. Pulse 168; temperature 100° Fahr. There was no cyanosis.

She was placed in a room the air of which was moistened and warmed by steam to a temperature ranging from 70° to 76° Fahr., which was maintained throughout her illness.

Mr. Rix ordered half a grain of calomel to be taken every four hours, and also a mixture containing antimony and ipecacuanha. No improvement in the patient's state took place, and on the following day, as the dyspnœa had become very urgent, and she was much cyanosed, chloroform was administered, and tracheotomy above the isthmus of the thyroid body was performed by Mr. Rix, and a silver tube introduced. Immediately after the operation the dyspnœa was greatly relieved, and the cyanosis gradually disappeared. A good deal of mucus was expelled through the tube just after the operation, but no trace of any false membrane. Patient passed a fairly quiet night, but coughed up a good deal of mucus through tube. Next day the respiration was much quieter than before, but still it was much accelerated, 34 per minute. She took liquid nourishment well. Antimony discontinued.

On the 17th she coughed up some small pieces of tough leathery false membrane through tube. Cough rather frequent. Lung sounds, clear. Small pieces of false membrane were coughed up during the two following days.

On the 18th the calomel was ordered to be given every eight hours, and on the 21st it was discontinued. The wound round tube looked sloughy and very unhealthy. The child could not swallow perfectly; on attempting to swallow some milk most of it regurgitated through tube and anterior nares. Respiration still very quick, 44 per minute. The lung sounds were perfectly healthy. She had rapidly become pale and emaciated.

On the 22nd the tube was removed in the morning, but it was found necessary to replace it at night owing to increased dyspnœa. While the tube was out, the dysphagia still remained, although the aperture in the neck was closed by the finger during deglutition.

On the 24th a small quantity of albumen (1 in 7) appeared in the urine. The temperature, which up to this time had fluctuated between 101° and 102° F., sank to 100°; respiration 30 per minute. The patient was allowed a boiled egg and bread and butter, which she swallowed well.

On the 26th temperature was normal, and the patient was much better. The urine still contained a trace of albumen. Deglutition was performed more easily, and rapidly improved after this date.

On the 29th the tube was removed. From this time the patient began to regain her health and strength. The steam was gradually dispensed with, and she was allowed solid food.

On January 7th she got up and was removed into a large ward amongst the other patients.

Her convalescence was retarded by a mild attack of tonsillitis and bronchitis, which subsided under appropriate treatment.

She was discharged from the infirmary cured on July 7th.

Remarks.—This case presents most of the symptoms of diphtheria—a disease from which, as is well known, tracheotomy does not, as a rule, afford much hope of recovery. The persistent high temperature, ranging from 101° to 102° during a period of thirteen days; the presence of albumen in the urine, though only during a short period of four days, and the dysphagia; the rapid change from a fat, rosy-looking child to a pale and emaciated one (very probably caused by the calomel); the fact of her sister having been taken ill two days previously with similar symptoms, and the rapidly fatal termination; the expulsion of pieces of false membrane through the tube—all point to diphtheria; but it must be added that there was no enlargement of the glands at angle of jaw, nor was any false membrane visible *in situ*. Tracheotomy was performed early in this case, which, perhaps, may have contributed a good deal towards the patient's recovery.

(From the *London Lancet.*)

WE hope to present to our readers in our next issue, notices of the medical college commencements, which have been and are still to be held in this city, with lists of the graduates of each. The proceedings of the various alumni associations, and of the Cook County Hospital Association, will also be then reported in full.

Summary.

PHYSIOLOGY.

ON THE ELIMINATION OF PHOSPHORIC ACID IN HERBIVOROUS ANIMALS.—By Bertram, in *Zeitschrift f. Biol.*, Band. XIV, Heft. III, 1878. (*Revue des Sc. Méd.*, July, 1879.)

Whilst among carnivorous animals the greater part of the phosphoric acid taken into the system is eliminated by the urine, among the herbivorous animals it is excreted almost wholly by the intestines. Liebig attributes this fact to the existence in the urine of the herbivorous animals of large quantities of carbonates, and the consequent insolubility of the acid phosphates.

Bertram has made, relative to this subject, experiments on herbivorous animals and on man. He has established, in fact, that among the herbivorous animals the phosphoric acid is eliminated with the fæces and not with the urine; but when a considerable quantity of acid phosphate of potash is added to the normal food, phosphoric acid appears in the urine, and that even to a marked degree. This does not take place, however, if the acid combines with calcium. In fact, calcium is always deficient when the urine is abnormally charged with phosphoric acid, and further, the ingestion of heavy doses of calcium salts causes the disappearance of the phosphates. Magnesia does not exert a like action. It follows, then, that the absence of the acid phosphates in the urine of the herbivorous animals is due to the richness of the vegetables in calcium salts.

In man the citrate of potash diminishes the proportion of the acid phosphates to a small degree; the citrate of calcium to an extent much more marked. The elimination of the acid phos-

phates becomes still less when to the citrate of potash the bicarbonate of calcium is added.

NORMAL REACTION OF SWEAT.—(*Pflüger's Archiv*, xviii. p. 494; *Centralblatt f. die med. Wiss.*, May 17, 1879.)

Trümpy and Luchsinger have been recently engaged upon a series of investigations to decide whether human sweat normally possesses an acid reaction. Luchsinger observed some time since, in the course of his experiments as to the existence of a distinct sweat center, that the secretion obtained from the paws of cats was alkaline, and not, as usually stated, acid. The skin covering these parts contains no sebaceous but only sweat glands, and from this fact the authors draw the conclusion that the sweat is usually alkaline, and that its acidity is due to the admixture with the free fatty acids present in the secretion from the sebaceous glands. This conclusion has lately been verified in respect to man. If the skin be carefully washed, and a secretion of sweat be then produced, either by means of warm baths, or by the injection of one-tenth gram of hydrochlorate of pilocarpin hypodermically, the sweat is at first alkaline, though occasionally it is acid, becoming alkaline when the secretion has continued for some length of time. The sweat secreted from the palm of the hand is always acid, although true sebaceous glands are absent; but it becomes alkaline even here when the secretion is prolonged. The sweat glands appear to perform the function of sebaceous glands in this part. A comparison is drawn between glands on the palm of the hand and those found in the ear. Those glands, dependent upon degenerative processes, normally decline upon the induction of a free secretion of sweat.

PRACTICAL MEDICINE.

TREATMENT OF TYPHOID AND OF TYPHUS BY THE DOUCHE.—(*Le Progrès Médical*, Sept. 20, 1879.)

M. Marcowitz of Bucharest communicates to the International Medical Congress at Amsterdam the results of his observations in regard to the treatment of typhoid and typhus by the douche.

The conclusions at which he arrives are: 1. The douche allows of the regular method of refrigerant treatment of 12.15 severe typhoid cases (allowing two to seven or eight douches for each patient) according to the tendency that the temperature has to return to the same point as before the application, without occupying more than two or three hours a day. 2. The patient is more thorougly roused by the douche than by the cold bath, and is due as much to the shock, which acts reflexly upon the nervous centers regulating the heat supply and preventing their paralysis for some hours at least, as to the actual withdrawal of heat. 3. In regard to contra-indications, M. Marcowitz is able to state with Liebermeister that scarcely anything but intestinal hæmorrhage, and a great paralysis of the heart, accompanied by a small and feeble pulse is absolutely opposed to the administration of the douche. 4. Pulmonary congestion, so long as it does not depend directly upon cardiac paralysis, is to be regarded rather as an indication than a counter-indication for the use of the douche.

TREATMENT OF SUB-ACUTE AND CHRONIC DYSENTERY BY IPECACUANHA AND BISMUTH INJECTIONS.—(*The Lancet*, Oct. 4, 1879.)

Dr. Houghton has resided in Sarawak, Borneo, for the last sixteen years, and has held during that time the appointment of principal senior medical officer to the government hospital, where malarial fevers, dysentery, and all endemic tropical diseases, are admitted into the medical wards. He has found, after a very large experience, that besides general treatment local applications in subacute and chronic cases of dysentery, by bismuth injections into rectum, have succeeded wonderfully, and that a great many hopeless chronic cases have been in this way relieved. The subnitrate of bismuth, to the extent of half a drachm, is to be rubbed down with the same weight of powdered gum in two ounces of cold water, and the resulting solution is to be injected from one to three times a day, according to the severity of the case. It is essential that the enema should be retained. The severe tenesmus and tormina will thus be relieved in a very short time. Ipecacuanha will of course be given, preferably in

doses of one scruple to one drachm, at intervals of eight to twelve hours, according to the case, when the rectum symptoms are urgent. Bismuth is a most effectual remedy, and the clinical records of some hundreds of cases speak most highly of its effect.

THE EARTH TREATMENT OF ABDOMINAL TUMORS.—(*The British Med. Journ.*, Sept. 27, 1879.)

Dr. Addinell Hewson, of Philadelphia, has successfully treated by earth-dressing several cases of abdominal tumors, where either ovariotomy has been indicated, or when the case has been considered hopeless. An account of his proceedings may be found in No. 1 of the *Medical Bulletin*, published in Philadelphia. The material he used was pure brick-clay of a yellow tint (due to the iron in it) and free from sand and grit. This was dried by a low fire or in the sun, care being taken not to let it be roasted, because in such a case its therapeutical action was destroyed. It was then rolled and sifted, and about a pound and a quarter mixed with sufficient water to constitute a thick paste was spread all over the affected part. To make it dry quickly he laid a towel over it to absorb the water: the towel was then removed, and in its place a layer of cotton-wool was smoothly spread on the paste for the purpose of hastening the drying, and of holding the clay when dry, in its place. The dressing was then completed by a simple bandage, and allowed to remain till it would fall off in from two to five days. He attributes the action of the earth to some chemical property, which also has a calming influence on the pain. One of his first patients was a gentleman who was suffering from abscesses and diffuse inflammation of the cellular tissue of the knee, and had made up his mind to have his leg amputated. He recovered the use of his limb and was completely cured. The other patients who derived benefit from his treatment were all women suffering from tumors of the uterus and broad ligaments; one of them had narrowly escaped ovariotomy. Another had for years suffered severe pain during the catamenia, caused by a fibro-cystic growth which involved the right ovary. In a third case, the patient had previously undergone ovariotomy, and induced electricity had been applied

through the uterus. The tumor grew again after the operation, and proved to be in reality a fibrous tumor of the uterus; there were besides several points of hernial protrusion of the bowels, on the spot of the wound, and she had the appearance and size of a woman at full term. The earth-dressing was applied under very unfavorable circumstances, but still proved successful, reducing her in size and preventing the hernial protrusions of the bowels by contracting the cicatrix.

MEDICAL TREATMENT OF HÆMORRHOIDS.—(*The Virginia Medical Monthly*, August. 1979.)

Dr. E. T. Sabal submits to the Medical Brief for August the following:

℞ Iodoform (℥i), 4 grams. Powder very fine in a mortar, and add
Pulv. opii (grs. xv), 1 gram.
Vaselin (℥i), 4 grams.

Mix. Apply locally morning and night and after every action of the bowels, after first washing with warm and cold water. One drachm of tannin may also be added to the above to deodorize the iodoform. Keep the bowels open by the following formula:

℞ Magnesiæ sulph.
Magnesiæ carb.
Sulphur. præcip.
Sacchar. lact. āā. (℥ss), 16 grams.
Pulv. anis. (℥ij), 8 grams.

Mix. Dose, one or two teaspoonfuls mixed in water at bed-time.

TREATMENT OF DYSENTERY BY RECTAL INJECTION.—(*The Lancet*, Oct. 18, 1879.)

Dr. King, commenting upon this method of treatment, which has been lately recommended by Dr. Houghton, remarks that in a large proportion of cases the dysenteric mischief is situated at the lower part of the colon and rectum, and local treatment is therefore of importance. In such cases benefit ensues as a result of directly curative measures; but even when the chief site is higher up, the effort to soothe the mucous membrane of the rectum, and allay spasm of the sphincter ani, amply repays the

attempt by affording rest not only to the diseased bowel, but to the patient generally. The attainment of this object is frequently much assisted by the action of bismuth used per rectum. The remedy may be given as an injection, merely suspended in mucilage in the case of children, and in adults where opium is being administered by the mouth, or forty grains may be combined with half a drachm of tincture of opium, and if intolerance of ipecacuanha by the mouth is encountered, two scruples of this drug may be added. In either case the bowel is to be washed out in as gentle a manner as possible with lukewarm water, the object being to simulate the soothing process of fomentation; to procure, for contact with the drugs, a clean surface; and finally to diminish the chance of loss of injection by overcoming beforehand the spasm produced on the first introduction of the tube. The cleansing, if carefully done, is not injurious, but proves of the greatest utility by removing mucus and irritating secretions, which, by their presence, excite tenesmus, a result analogous to the cessation of pain which may be witnessed after removal of a plug of tenacious mucus from the os uteri in chronic metritis. Bismuth and opium injections have also been found useful after the employment of injections of nitrate of silver.

ON THE TREATMENT OF DIPHTHERIA.—(*The Glasgow Medical Journal*, October, 1879.)

Dr. Diamond concludes that the exhausting nature of diphtheria is generally granted, and that stimulants and support are required from the very commencement, whilst depressants and depletion are entirely contra-indicated. A large proportion of the profession advocate the non-interference theory, whilst others again adopt an entirely opposite view in regard to treatment; the great majority adopt a middle course, however, and seek to destroy but not to remove the false membrane. For this purpose all sorts of caustics and disinfectants, from the ancient nitrate of silver to the modern salicylic acid, have been recommended. These remedies, however, have, according to Dr. Diamond, for the greater part, one objectionable feature in common. They are nearly all poisonous, and cannot be swallowed with safety; or if innocuous, they are apt to be powerless. On the whole he pre-

fers the tincture of perchloride of iron, either of full strength or slightly diluted with glycerine. He is also strongly of opinion that the false membrane should be destroyed, and if possible removed. In regard to tracheotomy, no opinion is offered, but Dr. Diamond suggests that when it has to be performed, advantage should be taken of the opening to clear away the membranes from the larynx and trachea, and to disinfect their seat.

THE TREATMENT OF PARALYSIS AGITANS.—(*Le Concours Médical*, Vol. i., No. 1, July, 1879.)

M. Hammond applies a continuous current to the spinal cord, great sympathetic, and muscles affected by this disease; at the same time he administers strychnia and phosphorus according to the following formula: Phosphate of zinc 0.15; extract of nux vomica 0.30; conserve of roses q.s. To make thirty pills. A pill to be taken twice a day. This treatment is furthered by a tonic regimen, and the avoidance of all mental or physical excitement. Hammond has had six cases of this nature, of which four were cured within two months. Trousseau had already recommended the use of strychnia alone in this affection. Prof. Charcot had tried various medicines, and amongst others, nitrate of silver, all of which he found to be useless, and he confines himself to the recommendation of continuous currents. The following rules should, according to Dr. Onimus, be attended to, whilst employing continuous currents: The upper part of the spinal cord should be first stimulated with a sufficiently strong current; the negative electrode being placed at the base of the skull, the positive one upon the cervical vertebræ, and superior cervical ganglion. If the paralysis is limited to the upper limbs, the positive electrode should be applied to the brachial plexus for a part of the sitting, the negative pole being left in its original position.

A PECULIAR AFFECTION OF THE GAIT IN HABITUAL DRUNKARDS.—(*Charité Annalen*, iv. Jahrgang; *Med. chir. Rundschau*, June, 1879.)

Dr. Westphal has observed a peculiar form of the disturbance of gait in cases of chronic alcoholism. The affection bears certain

resemblances to that occurring in tabes, from which, however, it may be readily differentiated. The peculiarity consists in the fact that at every step the limb is raised very much from the hip-joint, whilst the lower part of the leg remains bent, and then falls as if in the act of stamping. This affection cannot be mistaken for that arising from paralysis of the peroneal muscles, as the characteristic dependence and dragging of the foot is entirely absent. In tabes, on the other hand, the extension is made at the knee. In the disturbance of gait here alluded to there is entire absence of any ataxy of the lower extremities in the dorsal region: the sensibility remains intact in every form, and the tendon reflex is present to the ordinary extent. It is remarkable that after taking alcohol the disturbance of gait is lessened for a short time. Dr. Westphal explains the affection as due to painful sensations of cramp in the calf and in the knee-joint.

THERAPEUTICS.

THE TOPICAL USES OF ERGOT.—(*The American Journal of Medical Sciences*, July, 1879.)

Dr. Dabney has used ergot in cases of pterygium with decided benefit, and has obtained excellent results from its application in pharyngitis. In the latter affection it is of especial use when the blood-vessels of the pharynx are enlarged and tortuous, and when the secretion is not very great. In those cases where the mucous membrane is thickened it acts much more slowly, and in acute cases it possesses no advantage over other remedies. In affections of the pharynx a combination of ergotin with tincture of iodine, as in the following formula, is especially efficacious: Ergotin, grs. xx.; tinct. iod. f. ℥j.; glycerine to make f. ℥j. m. To be applied to the pharynx freely twice a day with a camel's hair brush. In hypertrophy of the tonsils, which is so often an accompaniment of chronic pharyngitis, the same solution applied to the glands two or three times a day gives excellent results. In cervical metritis the following is serviceable: Ergotin (or solid extract of ergot) grs. xx.; extract of belladonna, grs. ij.; cocoa butter q.s. M. Make into six suppositories, and insert into the vagina every

night after using the hot douche. In warm weather a solution of ergotin and extract of belladonna in glycerine and water may be used in place of the suppositories, as in the following formula: Ergotin, ℥ss.; extract of belladonna, grs. vj.; water and glycerine āā. f. ℥iv. m. A pledget of cotton is to be saturated with this solution and inserted into the vagina at bed-time after the hot douche. The cotton should of course be removed in the morning.

THE PHYSIOLOGICAL AND THERAPEUTICAL EFFECTS OF SALICYLIC ACID AND ITS COMPOUNDS.—(*New York Med. Journ.*, July and August, 1879.)

In an interesting paper, Dr. Moore sums up the recent advances in our knowledge of the physiological and therapeutic effects of salicylic acid. *In rheumatism* (1) its most beneficial effects are manifested in the more acute cases. In subacute cases there is less, and in chronic cases no advantage from its use. (2) It should be given in doses of not less than twenty grains, every two hours to an adult. (3) Its use should not abruptly terminate on the subsidence of the pain and fever, but the interval between the doses should be more and more prolonged. (4) By its employment "rheumatic fever" may, in the majority of cases, be made a disease of hours, instead of months, as it was formerly. (5) By the brevity of the febrile condition, the chances of the occurrence of cardiac complications are immensely diminished. *In typhoid fever* it is found (1) that salicylic acid and its salts have a decidedly beneficial effect in reducing the temperature, and therefore in decreasing the mortality. (2) That its tendency is to shorten the duration of the disease by its antiseptic properties. (3) That the salicylate treatment is equal to any other antipyretic form of medication. (4) That there is every reason to suppose that the salicylates, combined with the cold water treatment, would excel all other methods. (5) That a large dose of one drachm of salicylate of soda acts better given at once than in divided doses. Such a dose is sufficient for twenty-four hours. *In diphtheria* salicylic acid is a valuable agent, since it not only acts as an antiseptic, but also favors the exfoliation of the membrane from the throat by increasing the secretions behind it, and thus tearing it off.

It may be used either as a gargle or internally, or in both ways. It may also be employed beneficially in the form of spray, using a solution of the acid in alcohol and water, three grains to the ounce of fluid. The internal use of the salicylate should also be insisted upon. *In diabetes mellitus* the salicylate of soda given daily in doses of one hundred and twenty grains determines a decided diminution in the sugar excreted. The diminution of the saccharine element is liable to considerable variation, according to the class of case, but it is more remarkable by the greatest restriction of carbohydrates in the diet. Diminution in the quantity of urine is parallel with the diminution of sugar. Salicylic acid and its compounds have also been used with more or less success in the following diseases: Small-pox and scarlatina; dilatation of the stomach, mycosis œsophagi; yellow and intermittent fevers; pertussis; rheumatic iritis; neuralgia; dysentery; in ear diseases; pyæmia, erysipelas, surgical fever, etc.; and as an anaphrodisiac, in addition to its use in surgical practice.

THE ACTION AND USES OF HYOSCYAMIN.—(*The Lancet*, September and October, 1879.)

Mr. Prideaux analyses the various papers which have appeared upon the action and uses of hyoscyamin, the active principle of hyoscyamus. This substance, which was first obtained in 1873, is most reliable when it has been obtained as an extractive from the leaves. In its effects hyoscyamin approaches very closely to atropia. The ingestion of a small dose is followed by a reduction of the pulse-rate, accompanied by increased strength and a diminution of the respiratory act. An almost immediate quickening of the pulse-rate, with coincident central excitement, then occurs, followed by motor paralysis, and by loss of power over the co-ordinating centers, as shown by affections of the speech and vision. An hypnotic stage of greater or less duration then follows. Accompanying these symptoms there is always great dilatation of the pupil, hypermetropia, and dryness of the throat and skin. The drug is excreted by the kidneys, and to some extent by the intestinal canal. Death ensues in animals after large doses, through failure of the respiratory center, the heart's action continuing for a few seconds after the cessation of respiration. After

a poisonous dose of hyoscyamin, the symptoms observed are: a great acceleration of the heart's action, steady fall of temperature, and rapid diminution of the respiratory movements, dependent probably on paralysis of the vagus nerve. In man, hyoscyamin acts as an hypnotic, producing sleep, sometimes of considerable duration, particularly in conditions of the brain where there is great excitement, as in mania, delirium tremens, meningitis, and where ordinary hypnotics, such as opium, are inadmissible; and others, as chloral, have failed or exhausted their effect. In acute mania, with a greatly impaired condition of bodily strength, a small dose (one-sixteenth of a grain) will produce a most marked action, and this is also the case in the excitement of senile dementia; whilst in the excitement of chronic mania large and frequently repeated doses are required to produce any effect. In the use of the drug the bodily condition of the patient must always for this reason be borne in mind. In chronic mania with exacerbations, hyoscyamin is very useful, cutting short the exhibitions of temper and excitement of a violent and destructive character. These cases, as a rule, require only one dose, and that a large one, viz., half a grain, or even one grain, to effect any good. In conclusion, Mr. Prideaux sums up the results which he has obtained by the use of hyoscyamin in the following words:

1. In most cases of mania, or where there exists great excitement of any aggressive or destructive character, or rapidity of movement and speech, the use of the drug is the most effectual and rapid means of exercising that form of restraint which has been known as "chemical restraint."

2. That in cases of acute mania it will produce sleep and quietude when all other drugs have failed, and is one of the most rapid and reliable narcotics which we possess.

3. That in the treatment of the epileptic status in epileptic mania it diminishes the number, frequency, and severity of the attacks, especially if its administration be extended over some time.

4. That in delusional insanity, especially in the mania of suspicion, and in other forms of mania where the delusions are varying and changeable, it has a decided action in producing

such an altered condition of the cerebral status that a condition which has been termed "physiological mania" results, and this so eclipses the former delusions and hallucinations that they are forgotten and the mind becomes clear; while, if the subjection to the influence of the drug be continued, it ultimately leads, under favorable circumstances, to a permanent condition of quiescence, and restoration to a healthy state of mind.

5. That in chronic dementia, associated with destructive tendencies, bad habits and sleeplessness, the condition of the patient much improves after a continued course of small doses of the drug.

The disadvantages that have occurred from its use, and which have to be guarded against, are: the dryness of the tongue and pharynx that occurs, especially after a prolonged administration. This has been thought to contra-indicate its use in cases of artificial feeding, but provided the tube be dipped into an oily liquid before passing, I have not found it any inconvenience. The attacks of vomiting that have occurred, in some cases after administration for some weeks, necessarily leads to discontinuance of the drug. Vomiting occasionally occurs after one dose, even a small one, and in two cases mentioned by Dr. Lawson hæmatemesis took place. Where rapid and sudden action of the drug is feared in feeble cases, it is better to administer it with the food.

THE POISONOUS PROPERTIES OF CARBOLIC ACID.—(*Le Progrès Médical*, October 4, 1879.)

M. Binnendik read a paper before the Pharmacological section of the International Medical Congress recently held at Amsterdam, in which he discussed the poisonous properties of carbolic acid. The conclusions arrived at are: (1.) That pure carbolic acid is a poisonous substance which acts directly upon the cerebro-spinal nervous system, first stimulating and finally paralysing it. It does not appear to exert any influence upon the blood. Hæmoglobin however may often be detected in the urine for a short time after intoxication has been produced. (2.) The absorption and elimination of carbolic acid occur rapidly. The poisonous symptoms are developed very soon after the introduction of

the acid, and they disappear before the whole quantity has been eliminated. Under favorable conditions, as after subcutaneous injection, or administration upon an empty stomach, the elimination is complete in twelve or sixteen hours. (3.) Carbolic acid undergoes a change in the organism. It forms complex chemical bodies, such as compound sulphuric ethers of phenol, hydroquinon, and the pyrocatechin of Baumann, which are of a less poisonous nature than the pure carbolic acid. A portion is also in all probability oxidized. (4.) Glycerine added to aqueous solutions of carbolic acid diminishes the poisonous effects in rabbits. It has not yet been determined, however, whether the glycerine acts by retarding the rate of absorption, or whether its modifying action is due to other circumstances.

HYPODERMIC USE OF COLCHICIN IN RHEUMATISM.—(*Berlin klin. Wochensch*, No. 26, 1879; *The New York Medical Journal*, June, 1879.)

The solubility of colchicin in water renders it very applicable for hypodermic use. Dr. Badia, a Spanish physician, has communicated a number of successful results after its employment in this way in chronic rheumatism, and these have induced Dr. Heyfelder, of St. Petersburg, to try it in a series of cases. The results were, on the whole, surprisingly gratifying. The remedy was tried in rheumatic joint affections, neuralgias of the same nature, and especially ischiagra. Two milligrams were injected, in one gram of water, and the action was often remarkable, the severe pain becoming much lessened, and the movability of the affected articulation being rendered much freer. In a case of chronic articular rheumatism of the lower extremity which had existed for years, a surprising result was obtained by daily injections for ten days. There was freedom from pain accompanied by greatly increased mobility; and a relapse having occurred, a similar result was obtained by a single injection. In rheumatic ischiagra, the remedy had generally a very pronounced effect in relieving pain. The first result of the injection is a severe burning pain, which rarely lasts more than half an hour. In about one-third of the cases there was a local inflammatory reaction of varying degree at the place of injection. In very

few cases was there any considerable swelling or tenderness. Increased diuresis and strangury were noticed in a few cases. In persons with very sensitive skins it is advisable to use the remedy with great caution, and to diminish the dose. Where local inflammatory phenomena are present, the remedies should be discontinued, or applied at some distance.

TREATMENT OF DIPHTHERIA WITH BENZOATE OF SODA.—(*Berliner klin. Wochenschr.*, No. 7, 1879. *Cbl. f. med. Wiss.* Aug. 9, 1879.)

Dr. Letzerich has employed benzoate of soda in severe cases of diphtheria, as is recommended by Prof. Klebs. The dose administered to children under twelve months was a teaspoonful hourly of a five per cent. solution, for children of one to three years the same quantity of a seven-eighths per cent. solution, whilst to still older children, eight, ten and fifteen grams were given, adults receiving as much as fifteen-twenty-fifths grams a day. In no case did any untoward symptoms present themselves. The diphtheritic membrane was powdered with sodium benzoate, the local application being made every three hours in severe cases, and two or three times a day in less urgent ones. In every case the febrile symptoms were checked in from twenty-four to thirty-six hours, the temperature returning nearly to the normal. Dr. Letzerich recommends the employment of this remedy in catarrh of the stomach and intestines, especially in unweaned infants, in whose cases he has employed it with marked effects. It is also beneficial in mycotic catarrh of the bladder.

PECULIAR EFFECTS PRODUCED BY THE ADMINISTRATION OF HYDROCHLORATE OF MORPHIA.—(*British Medical Journal*, Oct. 18, 1879.)

Mr. Courtenay publishes the following case, which presents two interesting features:—1. The development of peculiar symptoms from the administration of morphia; 2. The marked physiological antagonism of belladonna to morphia, proved by the power of the former drug to speedily relieve the ill effects of the administration of the latter. A male coolie, under treatment for lumbago in the Lucea Parochial Hospital, Jamaica, was

ordered a hypodermic injection of one-sixth of a grain of morphia, the injection to be repeated every night. This treatment was continued for three nights, and on the morning following the third use of the injection the patient complained of feeling unwell at breakfast, and retired to bed at 9:10 a. m., when he was siezed with convulsions of a tetanic nature. His symptoms were the following: He was quite insensible; his eyes were widely opened and staring, the pupils slightly contracted; teeth clenched, face flushed, nostrils dilated, and breathing hurried. There was spasmodic contraction of the muscles of the upper extremity; the temperature was increased, the heart's action regular, though weak. This attack lasted about ten minutes, when consciousness returned, but, on attempting to speak, he was siezed again, and the convulsions returned at gradually-increasing intervals, until they finally left him at twelve noon. The treatment immediately adopted in this case was the administration of doses of ten drops of the tincture of belladonna every hour, with coffee and brandy, and the application of the extract of belladonna down the course of the spine. This treatment was continued for a few hours, and all urgent symptoms having yielded to it, the belladonna was given in diminished doses of five drops every four hours, and continued for the two following days. At the end of that time, no recurrence of the convulsions having taken place, the ordinary treatment for lumbago was recommenced, of course with the omission of the morphia injection.

ERGOT IN THE TREATMENT OF FIBROUS TUMORS OF THE UTERUS.—(*Arch. génér. de méd.*, Nov., 1879.

A critical review on the important and pressing question as to the treatment of fibroid tumors of the uterus, recently appeared in *The Medical Times and Gazette*. In this paper Dr. Herman states that the method of administration of ergot is a point of practical importance. Hildebrandt recommends hypodermic injections of ergotin into the abdominal parietes in the neighborhood of the tumor. He believes that the drug thus administered acts more energetically than when given by the mouth, and he cites in proof several cases where the administration by the mouth failed to afford relief, whilst the subcutaneous injections were

effectual. The experiments of Peton go far to prove that ergotin administered hypodermically exerts a definite local action, which is powerful and rapid in regard to the vessels in the immediate neighborhood of the injection, but is slow and feeble in the arteries of distant parts. This method has, however, the disadvantage of being painful, and it is difficult to exert sufficient control over its administration in the case of patients who are not seen every day. The effects of the two methods only appear to differ in intensity, and Dr. Herman therefore contents himself with giving the drug by the mouth. The inconveniences attending the use of ergot depend either upon a faulty preparation or upon idiosyncracy. The choice of the preparation of ergotin or sclerotinic acid appears to be immaterial, provided that the drug is fresh and is prepared in small quantities at a time.

BODENHAMER ON RECTAL MEDICATION.—(Pamphlet. New York: W. Wood & Co.—Abstract in *London Medical Record*, August 15, 1879.)

This essay is intended to draw more attention to the important subject of the administration of food and medicines by the rectum. The method is of great antiquity, and was recommended by Hippocrates, Galen and Celsus; but it has made little progress towards perfection, and the administration of enemata of any kind is often mischievously bungled by nurses, students, and even medical men. It is apparently forgotten that foreign substances introduced into the bowel are very apt to excite expulsive action, and therefore that extreme caution should be observed. The author recommends a screw syringe, which has the advantage that the enema cannot be suddenly shot into the rectum by a careless hand. Whatever instrument is used the fluid should be gently passed in, and so slowly that the bowel may have time to accommodate itself to the presence of the enema. After the administration of a medicated or nourishing enema, should there be a strong or irresistible desire to pass it, as is the case sometimes, when there exists an exquisitely irritable state of the organ, a sponge or fold of cloth dipped in hot water, and firmly pressed against the anus for a while, will generally appease the desire, and enable the patient to retain the enema. The author collects the

opinions of some eminent men, and in the end lays down certain conclusions based upon the evidence quoted. He holds that a fuller and more rapid effect can be obtained in this way than by giving drugs by the mouth, and he points out that of narcotics the rectum only requires about one-third of the quantity necessary by the mouth. The book is an interesting contribution to practical medicine.

TREATMENT OF ASTHMA BY POTASSIUM IODIDE AND IODIDE OF ETHYL.—(*Le Progrès Médical*, Sept. 6, 1879.)

Dr. Gougeon has observed the beneficial results which occurred in certain cases of dyspnœa, after the use of potassium iodide, either alone or combined with iodide of ethyl. He has, therefore, in his inaugural thesis analyzed the works of M. Sée upon the subject. The monograph by Dr. Gougeon is a faithful and orderly *résumé* of the facts which have been observed. Every one knows how difficult it is to cure or even to benefit the majority of patients who suffer from asthmatic dyspnœa, whether the asthma be chronic or symptomatic. Many medicines have been proposed, but they have failed in their purpose, and have consequently fallen out of use. Prof. Sée, after a great number of investigations, has at last been led to adopt heroic treatment in nearly every case. He administers iodide of potassium at the outset of the disease in a sufficient dose, i. e., at least one and one-half grams, increasing it progressively to three to four grams, and only limiting the use of the drug on the appearance of symptoms of iodism. It is found that in this way alone is the action of the remedy real and effectual. In the historical part of his work, M. Gougeon shows, that before M. Sée turned his attention to the drug, it had been employed without any definite rules; and that it was the active principle in several secret remedies for asthma.

SULPHO-METHYLATE OF SODA: A NEW PURGATIVE.—(*La Praticien*, January 27, 1879.)

M. Rabuteau has investigated a new purgative, analogous to sulpho-vinate of soda. It is obtained by treating methyl alcohol with sulphuric acid, when methyl sulphuric acid and water are

obtained. This product is neutralized with carbonate of barium, when the excess of sulphuric acid is thrown down in the insoluble form of barium sulphate, and there remains in solution sulpho-methylate of baryta, a substance which is very soluble, and which can be crystallized. It is then treated afresh with sulphuric acid, which liberates pure sulpho-methylic acid, which yields sulpho-methylate of soda when neutralized with soda. The salt is white and very soluble, crystallizing with difficulty, of a feeble taste comparable to that possessed by sulpho-vinate of soda, with a sweet after-taste. Unfortunately it decomposes very rapidly into sulphate of soda and methylic products of a slightly garlic-like odor. Ten grams of the salt in 25 c.c. of water injected into the veins of a dog produced constipation. Acting upon the observation that the substance, when introduced into the blood, gave rise to constipation, M. Rabateau believed that it should act as a dialytic purgative when given by the mouth. He therefore administered it to two patients; in one case a woman took 15 grams in two doses, when it produced three stools, of which two were copious; in the second, a man took 18 grams, resulting in two stools without colic. The taste of the purgative is hardly perceptible, but it is difficult to preserve it.

PLEURITIC EFFUSION TREATED WITH JABORANDI.—(*The Dublin Journal of Medical Science*, Nov., 1879.

Dr. Hunt has employed jaborandi in three cases of pleuritic effusion. In the first and second of these the remedy was only prescribed after the failure of other means of getting rid of the fluid which remained in the pleura following aspiration; and there could be very little doubt that absorption was materially hastened by its use. In the third case jaborandi was the sole drug that was tried, and therefore the results cannot be so conclusive. All the patients bore the jaborandi well: one, indeed, increasing in weight whilst he was sweating profusely under its influence. In no case did it lower the general health to any appreciable extent, and with the exception of the diaphoresis and salivation, there were no inconveniences attending its administration even in the largest doses (℥jss secundis horis). In none of the cases was any beneficial result obtained until profuse diaphoresis had been excited.

ANNOUNCEMENTS FOR THE MONTH.

SOCIETY MEETINGS.

Chicago Medical Society—Mondays, March 1 and 15.
West Chicago Medical Society—Mondays, March 8 and 22.

CLINICS.

MONDAY.

Eye and Ear Infirmary—2 p. m., Ophthalmological, by Prof. Holmes; 3 p. m., Otological, by Prof. Jones.
Mercy Hospital—2 p. m., Surgical, by Prof. Andrews.
Rush Medical College—2 p. m., Dermatological and Venereal, by Prof. Hyde; 3 p. m., Medical, by Dr. Bridge.
Woman's Medical College—2 p. m., Dermatological and Venereal, by Prof. Maynard; 3 p. m., Diseases of the Chest, Prof. Ingals.

TUESDAY.

Cook County Hospital—2 to 4 p. m., Medical and Surgical Clinics.
Mercy Hospital—2 p. m., Medical, by Prof. Hollister.

WEDNESDAY.

Chicago Medical College—2 p. m., Eye and Ear, by Prof. Jones.
Rush Medical College—3:30 to 4:30 p. m., Diseases of the Chest, by Dr. E. Fletcher Ingals.

THURSDAY.

Chicago Medical College—2 p. m., Gynæcological, by Prof. Jenks.
Rush Medical College—3 p. m., Diseases of the Nervous System, by Prof. Lyman.
Eye and Ear Infirmary—2 p. m., Ophthalmological, by Dr. Hotz.
Woman's Medical College—3 p. m., Surgical, by Prof. Owens.

FRIDAY.

Cook County Hospital—2 to 4 p. m., Medical and Surgical Clinics.
Mercy Hospital—2 p. m., Medical, by Prof. Davis.

SATURDAY.

Rush Medical College—2 p. m., Surgical, by Prof. Gunn.
Chicago Medical College—2 p. m., Surgical, by Prof. Isham; 3 p. m., Neurological, by Prof. Jewell.
Woman's Medical College—11 a. m., Ophthalmological, by Prof. Montgomery; 2 p. m., Gynæcological, by Prof. Fitch.

Daily Clinics, from 2 to 4 p. m., at the Central Free Dispensary, and at the South Side Dispensary.